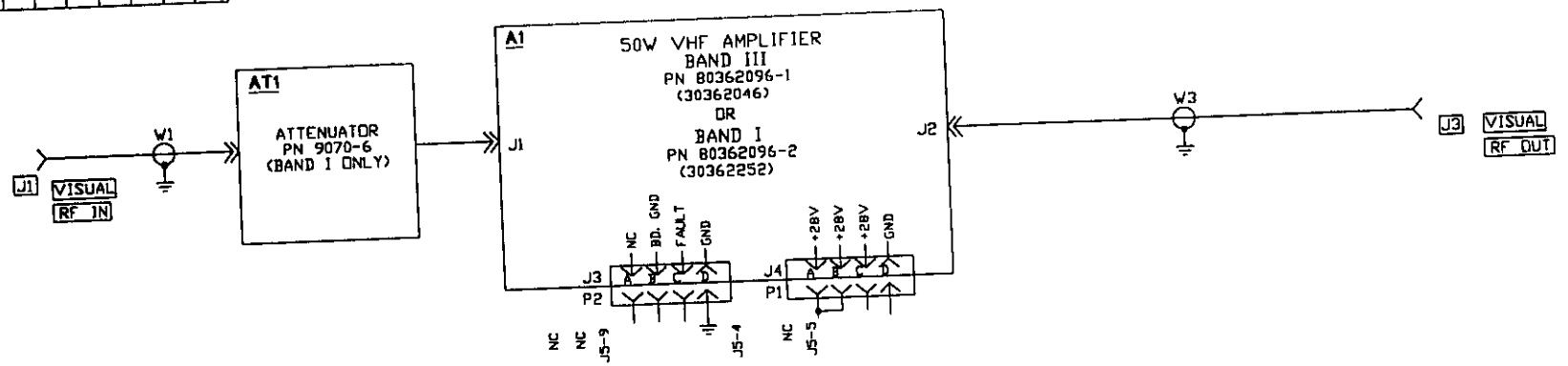
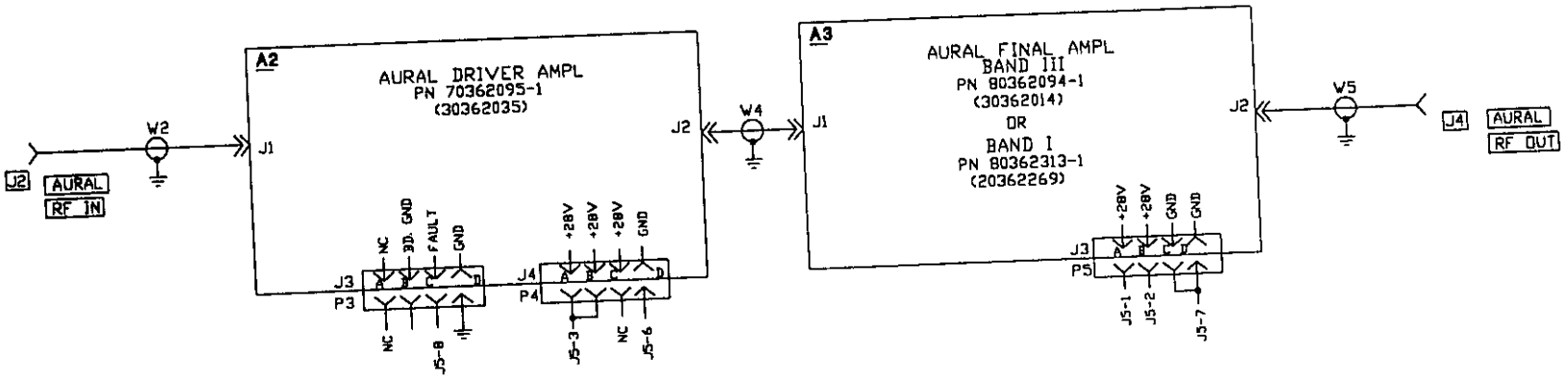
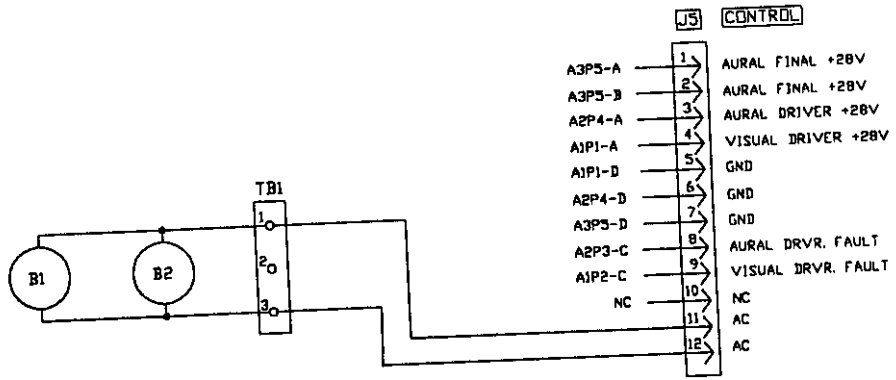
HIGHEST REFERENCE DESIGNATIONS

A3	J5	TB1	W5	B2	P5	AT1			

REFERENCE DESIGNATIONS NOT USED







ECN	DATE	BY	
348	4/13/98	A.C.	ADDED AT1
54	8-16-95	VN	A1 & AZJ4-C WAS CONNECTED TO A & B
			RELEASE AT REV 54

CTT			RN
CHK	CHK	APPV'L	

NEXT ASSY:			
VERSION			
MODEL			
SCALE			

DRAFT	6-8-94	VN
DR. CHK	6-29-94	CTT
M. ENGR		
E. ENGR	2-11-98	RN
RELEASE	2-11-98	RN

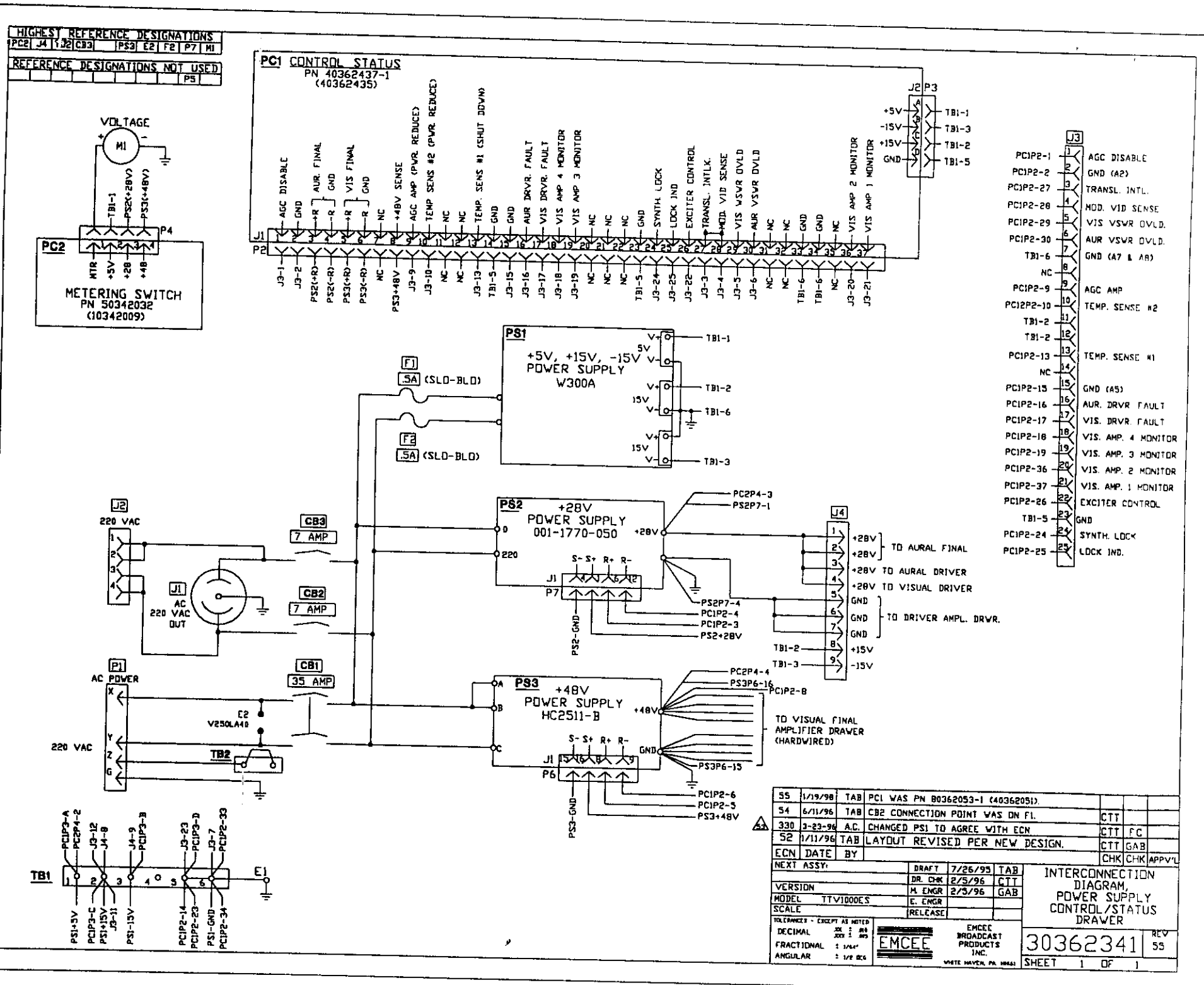
TOLERANCES - EXCEPT AS NOTED
DECIMAL
FRACTIONAL
ANGULAR

EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA. 18661

INTERCONNECTION DIAGRAM, VISUAL INTERMEDIATE POWER AMPLIFIER/ AURAL FINAL

30362006 REV A

SHEET 1 OF 1



ECN	DATE	BY	
55	1/19/98	TAB	PC1 WAS PN 80362053-1 (40362051).
54	6/11/96	TAB	CB2 CONNECTION POINT WAS ON F1.
330	3-23-96	A.C.	CHANGED PS1 TO AGREE WITH ECN
52	1/11/96	TAB	LAYOUT REVISED PER NEW DESIGN.

		CHK	CHK APPV'L
		CTT	
		CTT	FC
		CTT	GAB

NEXT ASSY:
VERSION
MODEL TTV1000ES
SCALE
TOLERANCES - EXCEPT AS NOTED
DECIMAL
FRACTIONAL
ANGULAR

DRAFT	7/26/95	TAB
DR. CHK	2/5/96	CTT
M. ENGR	2/5/96	GAB
E. ENGR		
RELEASE		

EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA 18661

INTERCONNECTION DIAGRAM, POWER SUPPLY CONTROL/STATUS DRAWER

30362341 REV 55

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS

PC2	A4	B2	E6	R6	J4	TB1	FL4

REFERENCE DESIGNATIONS NOT USED

GND — FL1 — TO A1, A2 GND
GND — FL2 — TO A3, A4 GND
+48V — FL3 — TO A1, A2 +48V
+48V — FL4 — TO A3, A4 +48V

A1 300 WATT FINAL VISUAL AMPLIFIER BAND I
80362308-1
(20362275)
E1 IN, E2 OUT, +48V E4, GND E6
FL3, FL1

A2 300 WATT FINAL VISUAL AMPLIFIER BAND I
80362308-1
(20362275)
E1 IN, E2 OUT, +48V E4, GND E6
FL3, FL1

A3 300 WATT FINAL VISUAL AMPLIFIER BAND I
80362308-1
(20362275)
E1 IN, E2 OUT, +48V E4, GND E6
FL4, FL2

A4 300 WATT FINAL VISUAL AMPLIFIER BAND I
80362308-1
(20362275)
E1 IN, E2 OUT, +48V E4, GND E6
FL4, FL2

J1 IN

PC1 SPLITTER
PN 40199174-1
R1 100 75W
R2 100 75W
R3 100 75W

PC2 COMBINER
PN 40362374-1
(20362373)
R4 100 75W
R5 100 75W
R6 100 250W
J3-5, J3-4 — E6
J3-11, J3-12
J3-6, J3-7 — E7
J2 OUT

TS1 175°F — J3-13
TS2 160°F — J3-14
E1

J3
NC
NC
NC
PC2-E6 — FAULT 1
PC2-E6 — FAULT 2
PC2-E7 — FAULT 3
PC2-E7 — FAULT 4
NC
NC
NC
PC2-GND — SIG. GND
PC2-GND — SIG. GND
TS-1 — TEMP SENS. (SHUT DOWN)
TS-2 — TEMP SENS (PWR REDUCE)
NC

J4
NC
TB1-1 — AC (FAN)
TB1-4 — AC (FAN)

B1
B2
TB1 (1 2 3 4)
J4-B
J4-C

ECN	DATE	BY	
A	8/5/98	TAB	DISCONNECTED C6, 7 & GND ON AC2. CONNECTED PINS 4 & 5 AND 6 & 7 ON J3.
55	1/13/97	CMG	ADDED J3-5 TO E6, J3-7 TO E7, J3-6 WAS J3-5 ADDED FAULT 3, 4 TO J3.
54	2/2/96	TAB	ADDED J4.
53	11-28-95	A.C.	J3-15 WAS TB1-3
52	11-2-95	A.C.	CHANGED INTERCONNECT DIAGRAM TO CONFORM TO ACTUAL UNIT.
			RELEASE AT REV 55

			C.T.T.		RGN
			C.T.T.	GB	RGN
			C.T.T.	GB	RGN
			C.T.T.	GB	RGN
			CHK	CHK	APPV'L

NEXT ASSY:
VERSION
MODEL
SCALE

DRAFT	8-9-95	A.C.
DR. CHK	11-10-95	C.T.T.
M. ENGR	2-2-96	GAB
E. ENGR	2/11/98	RGN
RELEASE	2/11/98	RGN

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA 18661

INTERCONNECTION DIAGRAM, VISUAL FINAL AMPLIFIER DRAWER, BAND I

30362357 REV A

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS							
PC2	A4	B2	J4	E6	R6	FL4	TB1
REFERENCE DESIGNATIONS NOT USED							

GND — FL1 — TO A1, A2 GND
GND — FL2 — TO A3, A4 GND
+48V — FL3 — TO A1, A2 +48V
+48V — FL4 — TO A3, A4 +48V

A1 300 WATT FINAL VISUAL AMPLIFIER BAND III 40362372-1 (30362367)
E1 IN, E2 OUT, +48V E3, GND E6, FAULT E5, GND, GND
FL3, FL1; J3-4, J3-11, E1

A2 300 WATT FINAL VISUAL AMPLIFIER BAND III 40362372-1 (30362367)
E1 IN, E2 OUT, +48V E3, GND E6, FAULT E5, GND, GND
FL3, FL1; J3-5, J3-11, E1

A3 300 WATT FINAL VISUAL AMPLIFIER BAND III 40362372-1 (30362367)
E1 IN, E2 OUT, +48V E3, GND E6, FAULT E5, GND, GND
FL4, FL2; J3-6, J3-12, E1

A4 300 WATT FINAL VISUAL AMPLIFIER BAND III 40362372-1 (30362367)
E1 IN, E2 OUT, +48V E3, GND E6, FAULT E5, GND, GND
FL4, FL2; J3-7, J3-12, E1

J1 IN
R1 100 75W
R2 100 75W
R3 100 75W
PC1 SPLITTER PN 40199156-1
R4 100 75W
R5 100 75W
R6 100 250W
PC2 COMBINER PN 40199157-1
J2 OUT

B1, B2
TB1: 1, 2, 3, 4
J4-B, J4-C

TS1 175°F — J3-13
TS2 160°F — J3-14
A1-GND., A2-GND., A3-GND., A4-GND., E1

J3

1	NC	NC
2	NC	NC
3	NC	NC
4	A1E5	FAULT 1
5	A2E5	FAULT 2
6	A3E5	FAULT 3
7	A4E5	FAULT 4
8	NC	NC
9	NC	NC
10	NC	NC
11	A1-GND., A2-GND.	SIG. GND
12	A3-GND., A4-GND	SIG. GND
13	TS-1	TEMP SENS. (SHUT DOWN)
14	TS-2	TEMP SENS (PWR REDUCE)
15	NC	NC

J4

A	NC	NC
B	TB1-1	AC (FAN)
C	TB1-4	AC (FAN)

ECN	DATE	BY			
S3	2/2/96	TAB	ADDED J4.	CTT	GB	RN
S2	11/28/95	A.C.	J5-15 WAS TB1-3	CTT	GB	RN
				CHK	CHK	APPV'L

NEXT ASSY:
VERSION
MODEL
SCALE

DRAFT	11-3-95	A.C.
DR. CHK	11-10-95	C.T.T.
M. ENGR	2-2-96	GAB
C. ENGR	2/11/98	RN
RELEASE	2/11/98	RN

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .03, .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2°

EMCEE BROADCAST PRODUCTS INC. WHITE HAVEN, PA 18661

INTERCONNECTION DIAGRAM, VISUAL FINAL AMPLIFIER DRAWER BAND III

30362376 REV S3

SHEET 1 OF 1

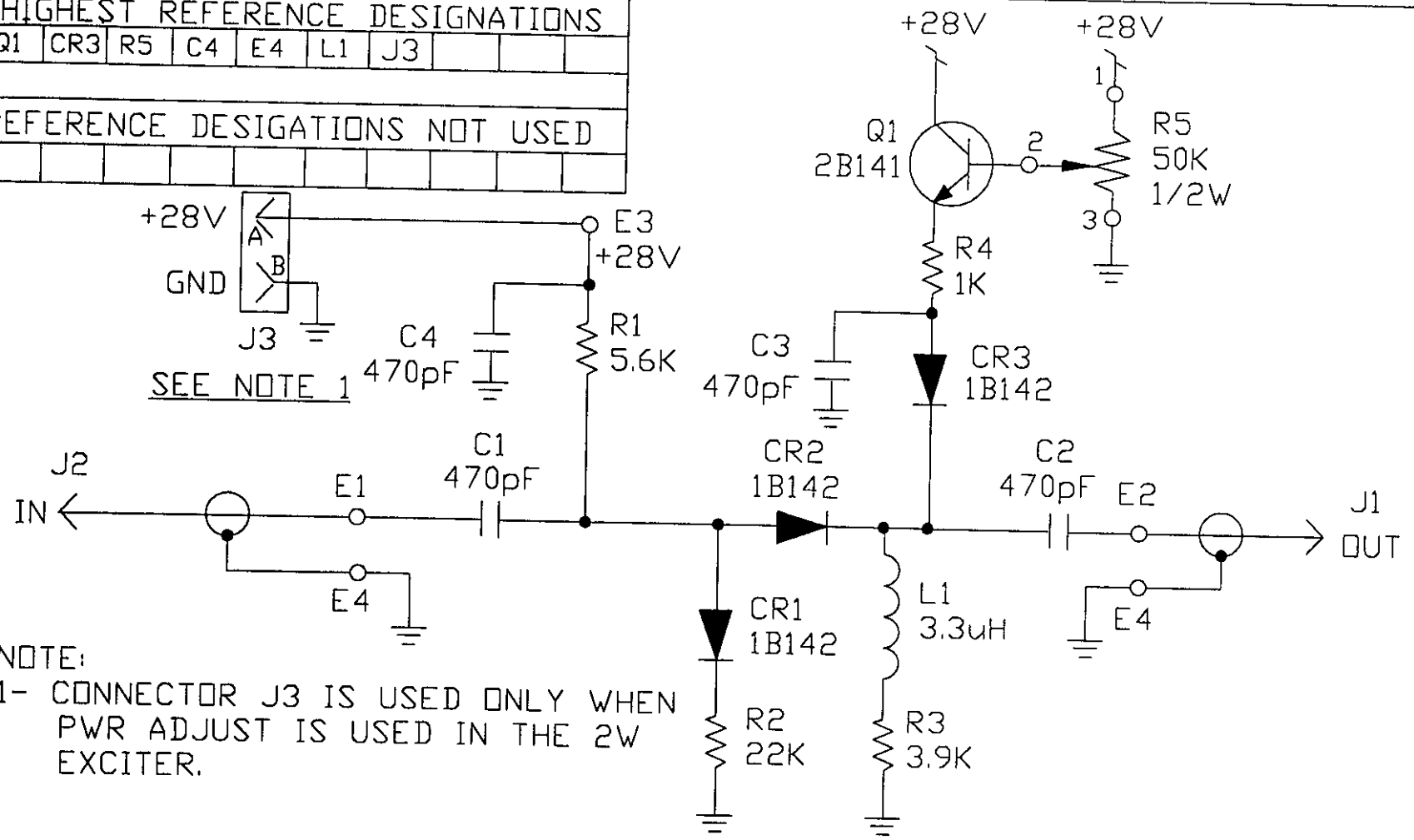
MODULE SCHEMATICS

ARE LISTED IN

ALPHANUMERICAL SEQUENCE

HIGHEST REFERENCE DESIGNATIONS									
Q1	CR3	R5	C4	E4	L1	J3			

REFERENCE DESIGATIONS NOT USED									



NOTE:
1- CONNECTOR J3 IS USED ONLY WHEN PWR ADJUST IS USED IN THE 2W EXCITER.

ECN	DATE	BY				
A	7/1/91	TAB	ADDED J3 & NOTE-1.	C.T.T.		C.T.T.
			COMP RELEASED AT REV 53	CHK	CHK	APPV'L

NEXT ASSY: 503311257	DRAFT	4-1-88	C.T.T.
	DR. CHK		
VERSION	M. ENGR		
MODEL	E. ENGR		
SCALE	RELEASE	5-27-89	R.N.

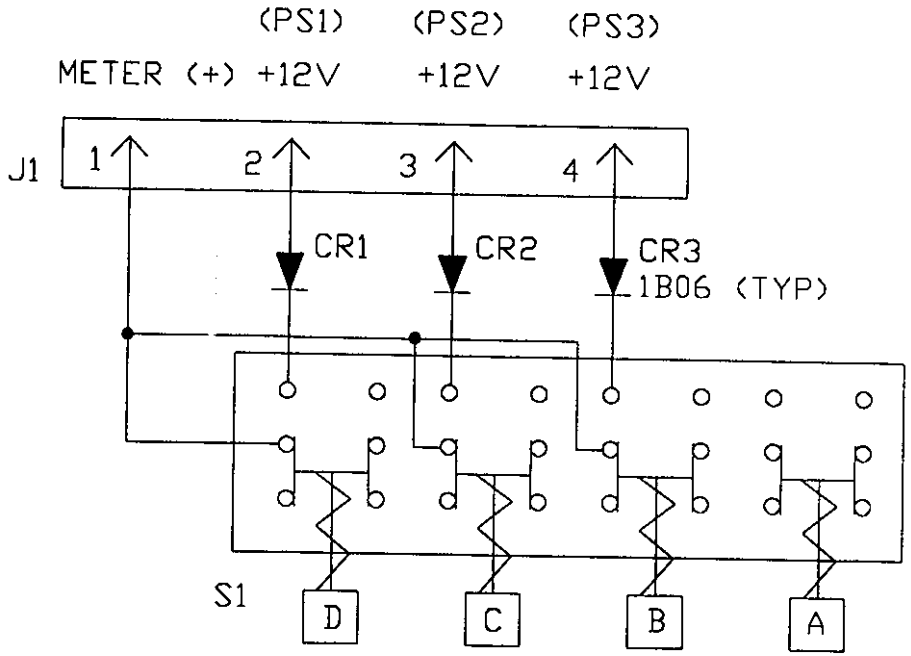
TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010, .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE
ELECTRONICS MISSILES & COMMUNICATIONS INC.
WHITE HAVEN, PA. 18661

SCHEMATIC DIAGRAM, POWER ADJUST

10331255 REV A

SHEET 1 OF 1



ECN	DATE	BY		C.T.T. CHK	RGN CHK	RGN APPV'L
151	5-26-93	C.T.T.	ADDED DIODES CR1, 2, AND 3			

NEXT ASSY:	DRAFT	11-14-86	C.T.T.
	DR. CHK	12-4-86	W.J.H.
VERSION	M. ENGR		
MODEL	E. ENGR		
SCALE	RELEASE	1-17-87	RGN

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64'
ANGULAR ± 1/2 DEG

EMCEE
ELECTRONICS MISSILES & COMMUNICATIONS INC.
WHITE HAVEN, PA. 18661

C.T.T.
SCHEMATIC DIAGRAM, METERING SWITCH (TSA100)

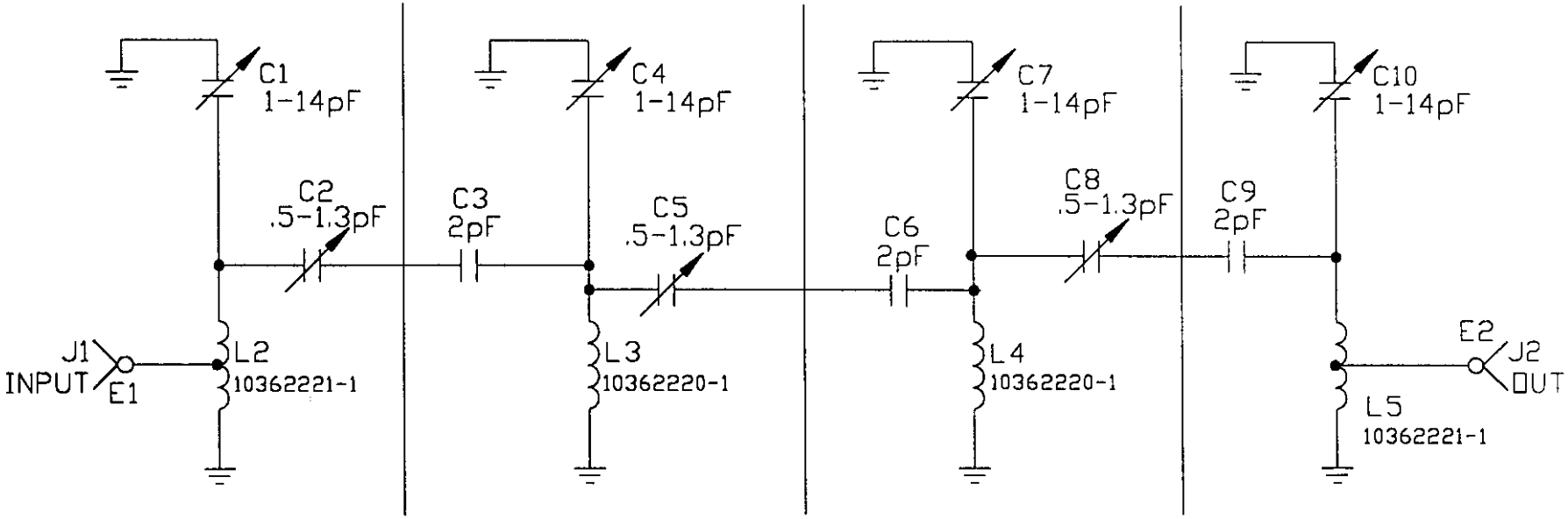
10342009 REV B

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS									
C10	L5	J2	E2						

REFERENCE DESIGNATIONS NOT USED									
L1									

NOTE:
1- CONNECTORS J1 & J2 ARE NOT LOCATED ON PC BOARD.



RELEASED AT REV 53

ECN	DATE	BY		CHK	CHK	APPV'L
NEXT ASSY: SEE DASH NO. ON DWG.			DRAFT	7-27-94	VN	
			DR. CHK	8-17-94	CTT	
VERSION			M. ENGR			
MODEL			E. ENGR	8-18-94	JL	
SCALE			RELEASE	6-14-95	RGN	

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE
ELECTRONICS MISSILES & COMMUNICATIONS INC.
WHITE HAVEN, PA. 18661

SCHEMATIC DIAGRAM, BANDPASS FILTER BAND III

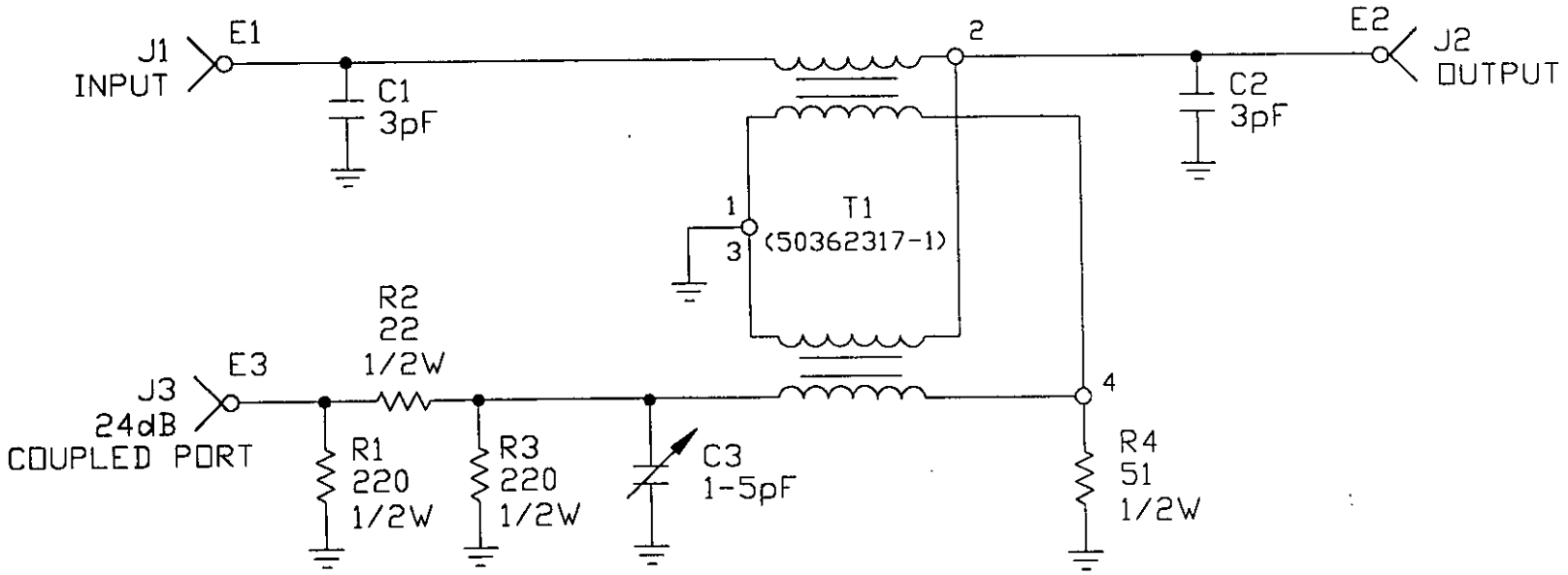
10362113 REV 53

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS									
T1	C3	J3	R4	E3					

REFERENCE DESIGNATIONS NOT USED									

NOTE:
J1, J2, J3 ARE NOT MOUNTED ON PC BOARD.



ECN	DATE	BY	RELEASE AT REV 51	CHK	CHK	APPV'L
NEXT ASSY: SEE DASH NO. ON DWG.			DRAFT	6-19-95	VN	
			DR.. CHK	6-22-95	CTT	
VERSION EG & G			M. ENGR			
MODEL			E. ENGR			
SCALE			RELEASE	7-7-95	RGN	

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE
EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA. 18661

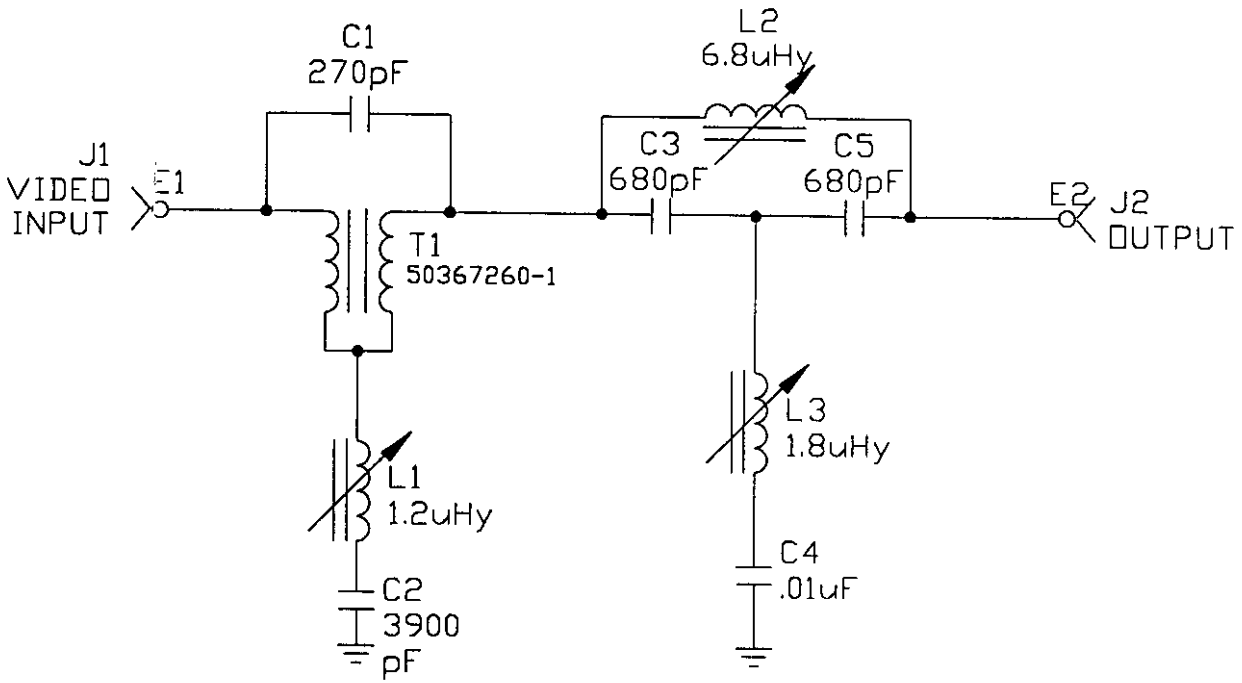
SCHEMATIC DIAGRAM, 24dB DIRECTIONAL COUPLER (30 TO 300MHz)

10362314 REV 51

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS									
C5	E2	J2	L3	T1					

REFERENCE DESIGNATIONS NOT USED									



ECN	DATE	BY	RELEASED AT REV 51	CHK	CHK	APPV'L

NEXT ASSY:	DRAFT	12-10-93	TAB
	DR. CHK	12-28-93	CTT
VERSION	M. ENGR		
MODEL	E. ENGR	6-14-95	RGN
SCALE	RELEASE	6-14-95	RGN

TOLERANCES - EXCEPT AS NOTED

DECIMAL	.XX ± .010 .XXX ± .005
FRACTIONAL	± 1/64'
ANGULAR	± 1/2 DEG

EMCEE

ELECTRONICS MISSILES & COMMUNICATIONS INC.
WHITE HAVEN, PA. 18661

SCHEMATIC DIAGRAM, GROUP DELAY CIRCUIT

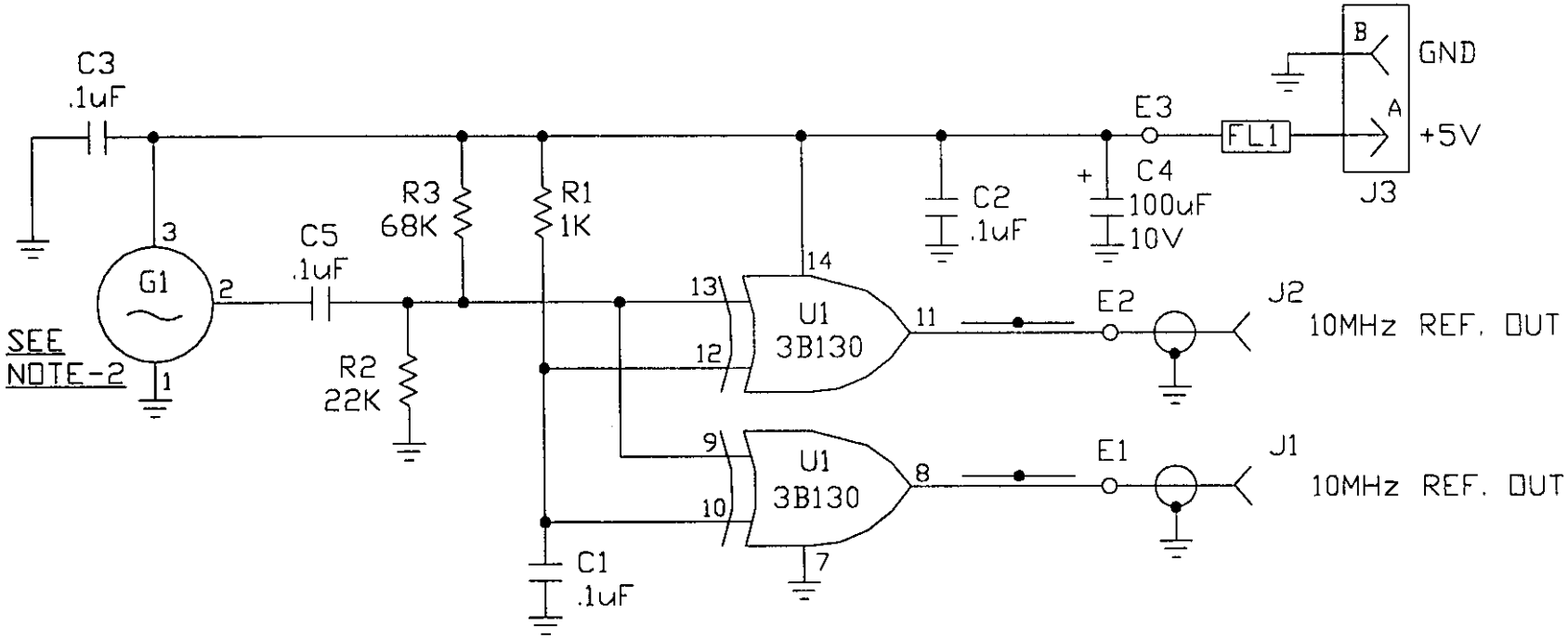
10367257 | REV 51

SHEET 1 OF 1

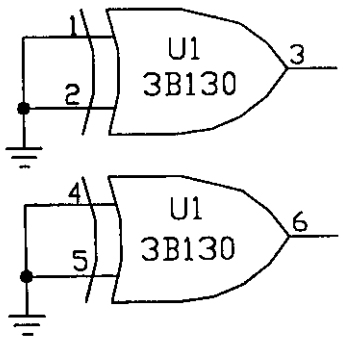
HIGHEST REFERENCE DESIGNATIONS									
C5	R3	U1	G1	E3	J3	FL1			

REFERENCE DESIGNATIONS NOT USED									

NOTES: UNLESS OTHERWISE SPECIFIED
1- COMPONENTS FL1 AND J1-J3 ARE NOT LOCATED ON BD ASSY.
2- FOR G1 (RTX0771AD), R2 IS 47K, C5 IS A 0 OHM RESISTOR AND R3 IS REMOVED.



SPARE



ECN	DATE	BY				
B	12/10/98	TAB	ADDED NOTE-2.	CTT		CTT
A 293	8-10-95	VN	ADDED C5, R3; R2 VALUE WAS 4.7K	CTT	DB	DB
			RELEASED AT REV 57	CHK	CHK	APPV'L

NEXT ASSY:	DRAFT	7-03-90	SMP
	DR. CHK	10-4-90	CTT
VERSION	M. ENGR		
MODEL	E. ENGR	11-8-90	JL
SCALE	RELEASE	6-14-95	BN

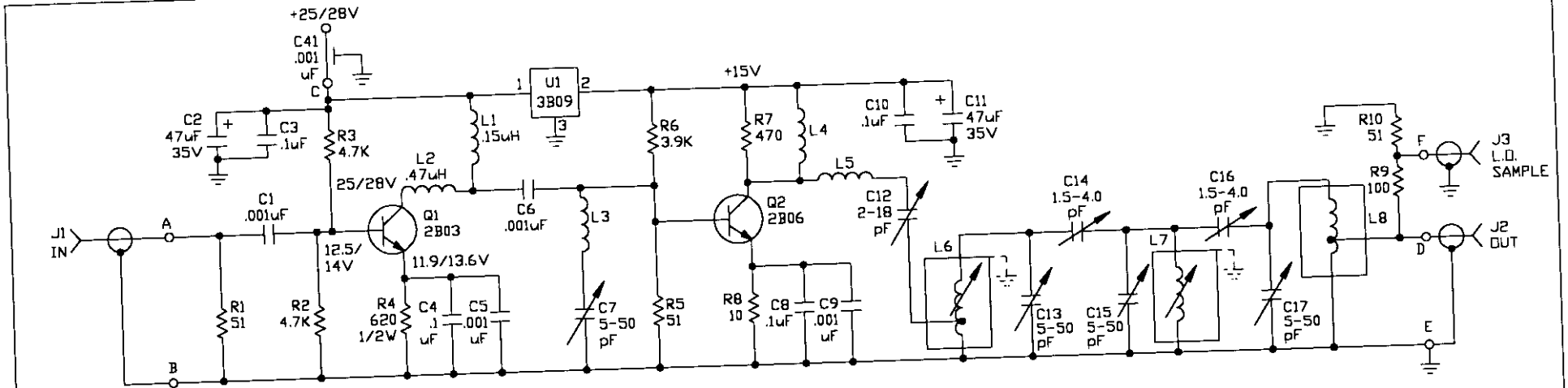
TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010, .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2° DEG

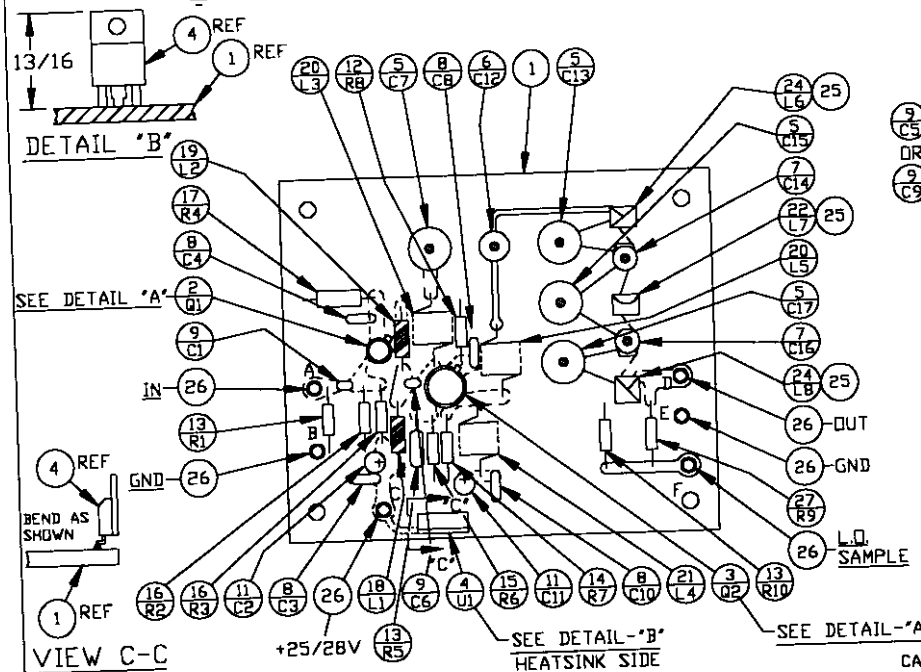
EMCEE
ELECTRONICS MISSILES & COMMUNICATIONS INC.
WHITE HAVEN, PA. 18661

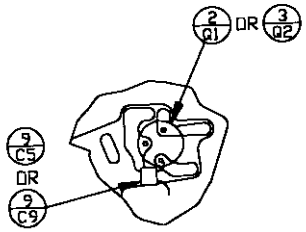
SCHEMATIC DIAGRAM, REF. OSCILLATOR

10368037 REV B

SHEET 1 OF 1







DETAIL "A"
(SEE NOTE-3)

NOTES : UNLESS OTHERWISE SPECIFIED
1-ALL RESISTORS ARE 1/4W, 5%.
2-CONNECTORS J1, J2, J3, AND CAPACITORS C41 ARE MOUNTED ON MODULE CAN.
3-CAPACITORS C5 & C9 ARE MOUNTED ON BOTTOM OF PC BOARD (SEE DETIL "A") FROM EMITTER LEAD OF TRANSISTOR Q1 & Q2 TO GND.

ECN	DATE	BY				
E	12-29-89	DB	ADDED TRANSISTOR VOLTAGE 13.6V	C.T.T.		R.G.N
A1	4-25-89	SMP	ADDED SECTION C-C	C.T.T.		C.T.T.
6025	4-18-83	W.J.H.	REFER TO ECN	B.G.	W.J.H.	M.G.
5423	8-8-80	JL	ITEM 7 WAS EF JOHNSON,1-3pF CAP P.N. 278-0103-005	W.J.H.	R.K.	W.J.H.
				CHK	CHK	APPV'L

NEXT ASSY: P/L B280-76	DRAFT	8-2-77	J.C
	DR. CHK	3-2-78	W.J.H.
VERSION	M. ENGR	3-2-78	G.K.
MODEL	E. ENGR		
SCALE NONE	RELEASE	3-20-80	G.B.

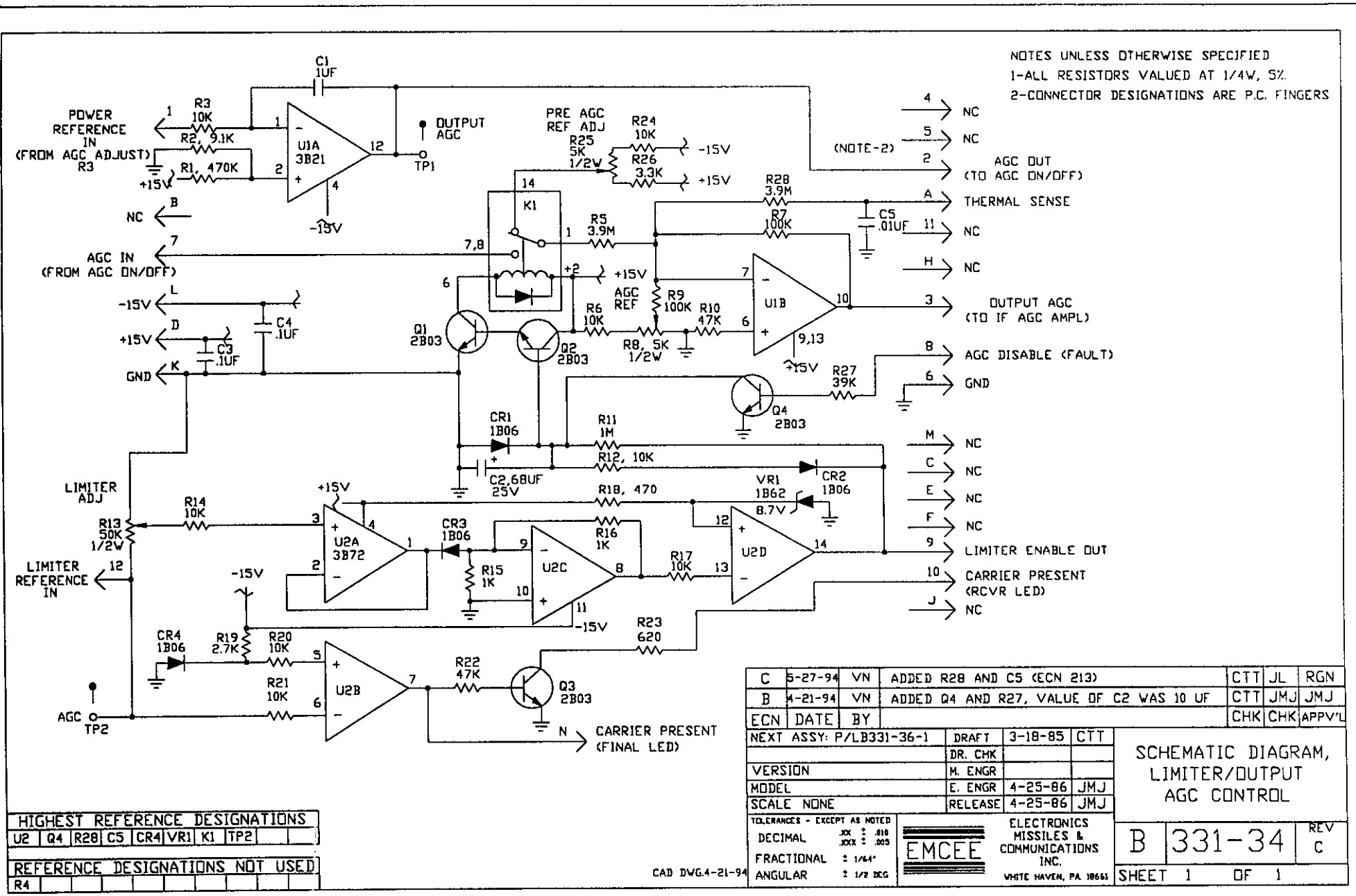
TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE
ELECTRONICS MISSILES & COMMUNICATIONS INC.
WHITE HAVEN, PA. 18661

SCHEMATIC DIAGRAM, & ASSEMBLY, PC BOARD, MULTIPLIER, X2

PL B280-35 REV E

SHEET 1 OF 1



C	5-27-94	VN	ADDED R28 AND C5 (ECN 213)	CTT	JL	RGN
B	4-21-94	VN	ADDED Q4 AND R27, VALUE OF C2 WAS 10 UF	CTT	JMJ	JMJ
ECN	DATE	BY		CHK	CHK	APPV'L

NEXT ASSY: P/LB331-36-1	DRAFT	3-18-85	CTT	SCHEMATIC DIAGRAM, LIMITER/OUTPUT AGC CONTROL
	DR. CHK			
VERSION	M. ENGR			
MODEL	E. ENGR	4-25-86	JMJ	
SCALE NONE	RELEASE	4-25-86	JMJ	

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010, .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

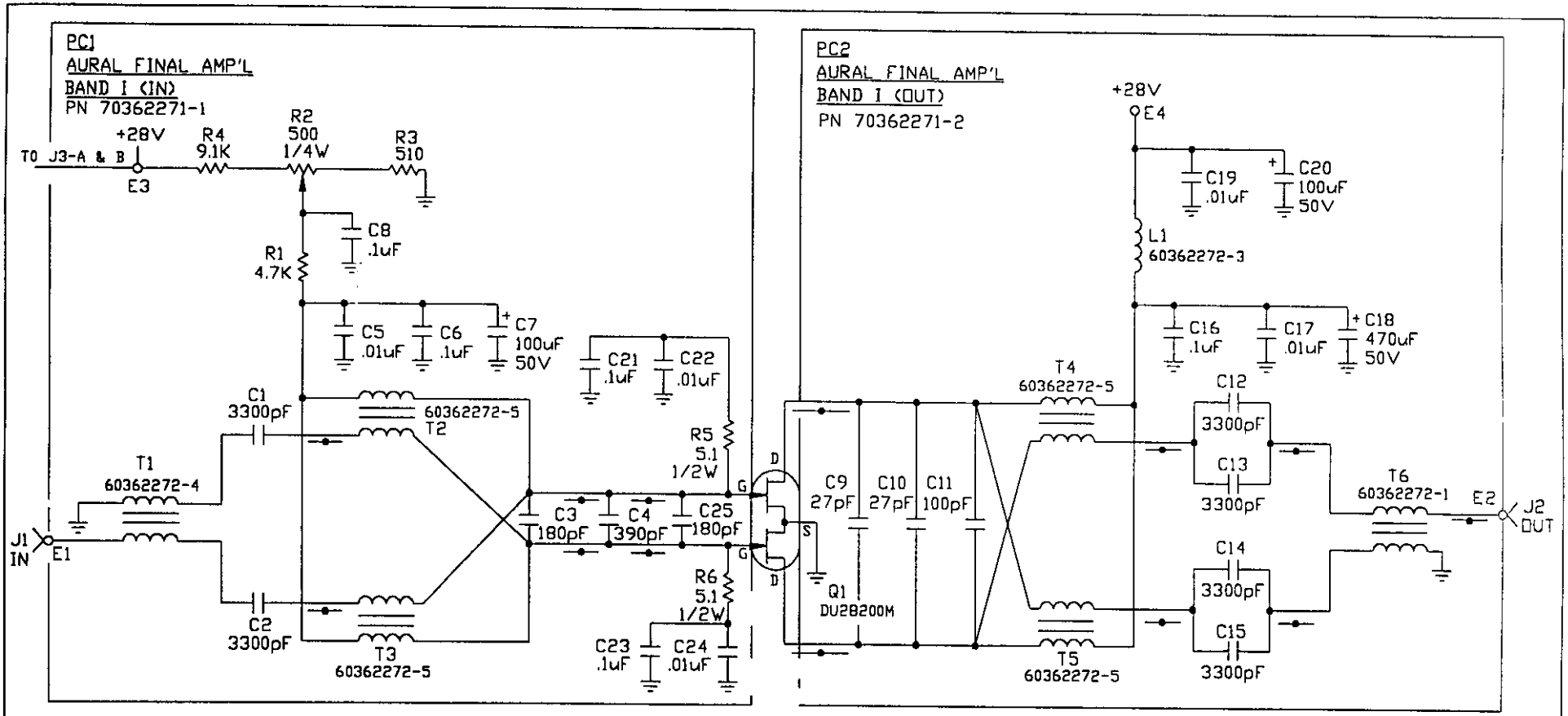
EMCEE
ELECTRONICS MISSILES & COMMUNICATIONS INC.
WHITE HAVEN, PA. 18661

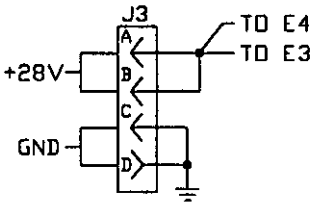
B | 331-34 | REV C

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS								
U2	Q4	R28	C5	CR4	VR1	K1	TP2	

REFERENCE DESIGNATIONS NOT USED								
R4								





HIGHEST REFERENCE DESIGNATIONS									
C25	Q1	J3	E4	PC2	T5	L1	R6		

REFERENCE DESIGNATIONS NOT USED									
T1	T6								

NOTES:

1- COMPONENTS J1, 2, 3, & Q1, T1, T6, AND C25 ARE NOT LOCATED ON PCB ASSEMBLIES.

ECN	DATE	BY		CHK	CHK	APPV'L
393	4/24/97	CMG	PC1-R4 WAS 2.4K,R2 WAS 5K, & R3 WAS 1K.	C.T.T.		RGN
EM 165	12/4/95	AC	C3 WAS 270pF, C4 WAS 510pF, C11 WAS 39pF AND ADDED C25.	C.T.T.		RGN
52	6-1-95	AC	CHANGED C9 & 10 FROM 51pF TO 51pF, C11 FROM 51pF TO 39pF. CHANGED T1 FROM 60362272-1 TO 60362272-4, T2 - T5 FROM 60362272-2 TO 60362272-5 AND REMOVED T1 & T6.	C.T.T.	D.B.	RGN

NEXT ASSY:		DRAFT	3-13-95	AC
		DR. CHK	4-3-95	C.T.T.
VERSION EG & G		M. ENGR		
MODEL		E. ENGR	5-3-95	JMJ
SCALE		RELEASE	2/11/98	RGN

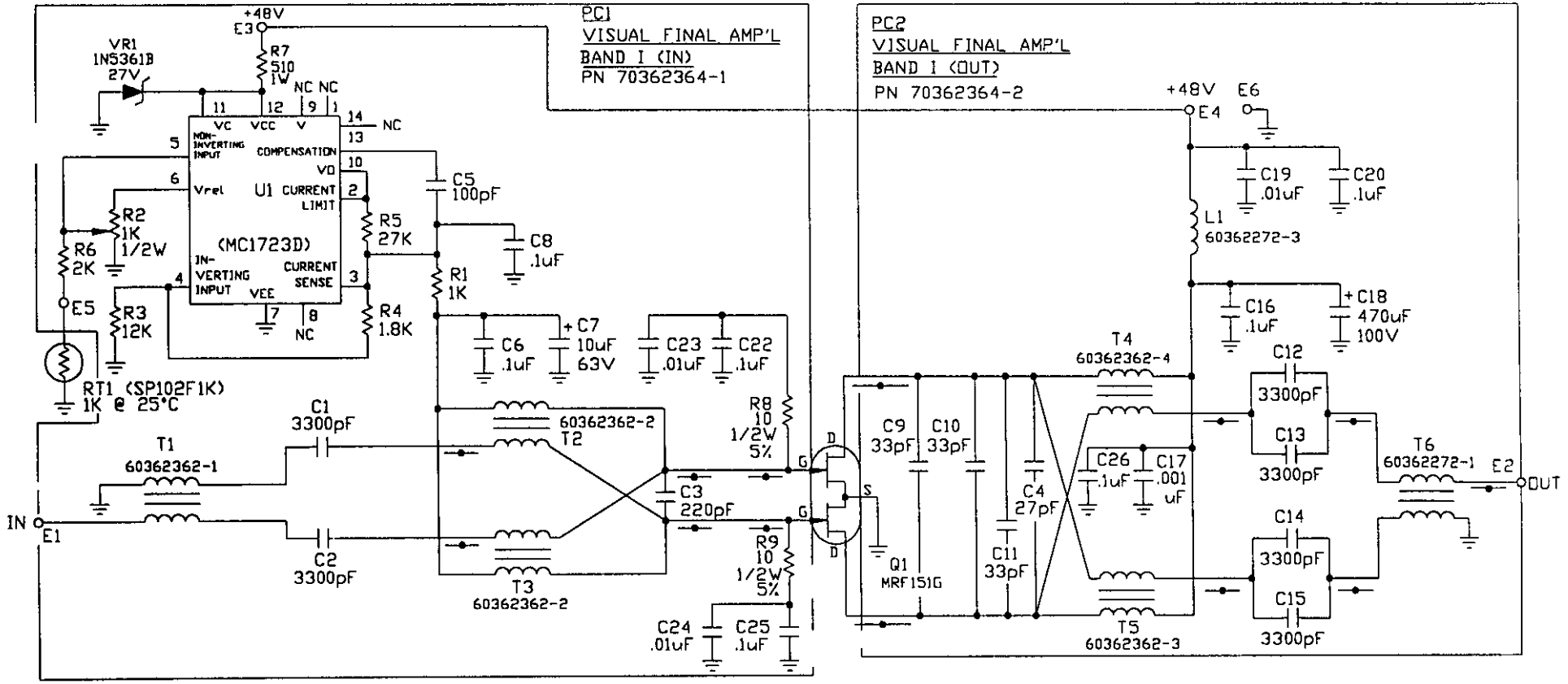
TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA. 18661

SCHEMATIC DIAGRAM, AURAL FINAL AMPLIFIER BAND I

20362269 REV 54

SHEET 1 OF 1



A	10/2/97	TAB	ADDED NOTE-2. R5 WAS 27 OHM.	C.T.T.		RGN
ECN	DATE	BY		CHK	CHK	APPV'L

NEXT ASSY:	DRAFT	3-13-95	AC
	DR. CHK	4-25-95	C.T.T.
VERSION	M. ENGR		
MODEL	E. ENGR	4-26-95	JMJ
SCALE	RELEASE	2-11-98	RGN

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA. 18661

SCHEMATIC DIAGRAM, 300W FINAL VISUAL AMPLIFIER BAND I (VHF)

20362275 REV A

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS									
C26	Q1	U1	E6	R9	T6	L1	RT1	PC2	VR1

REFERENCE DESIGNATIONS NOT USED									
J1	J2	C21	J3						

NOTES:

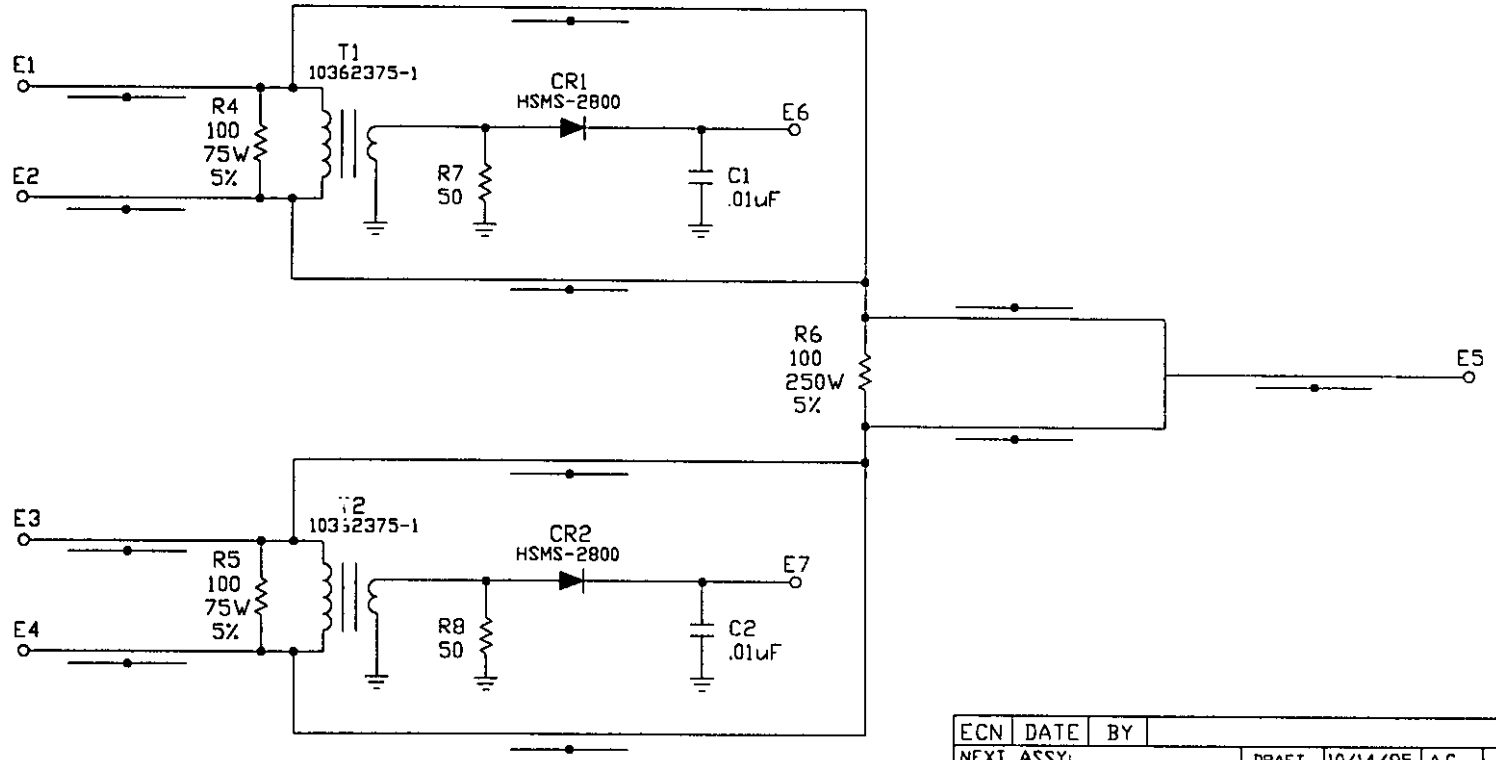
1- COMPONENTS J3, T1-T6, & Q1 ARE NOT LOCATED ON PCB ASSEMBLIES.
2- ALL RESISTORS VALUED AT 1/4W, 5%.

HIGHEST REFERENCE DESIGNATIONS									
E7	R8	C2	CR2	T2					

REFERENCE DESIGNATIONS NOT USED									
R1	R2	R3							

NOTE:

1- COMPONENTS R4, 5, 6, AND T1 & T2 ARE NOT ON



ECN	DATE	BY				CHK	CHK	APPV'L
NEXT ASSY:			DRAFT	10/14/95	A.C.			
			DR. CHK	10/23/95	C.T.T.			
VERSION			M. ENGR					
MODEL			E. ENGR	2-11-98	RGN			
SCALE			RELEASE	2-11-98	RGN			

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE
ELECTRONICS MISSILES & COMMUNICATIONS INC.
WHITE HAVEN, PA. 18661

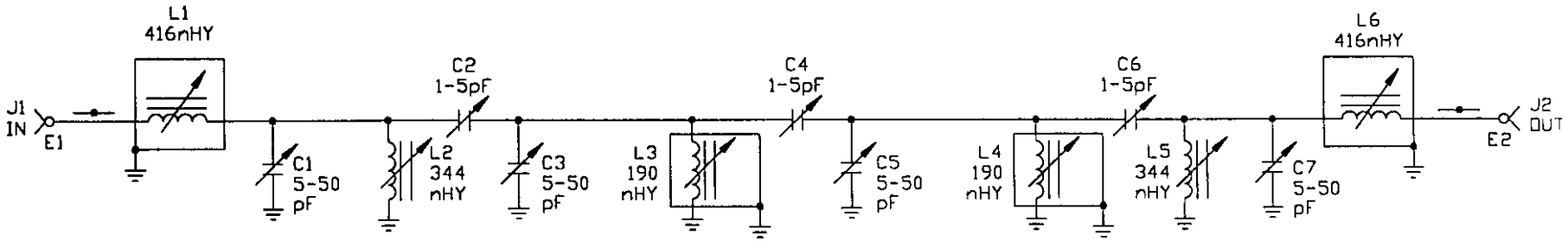
SCHEMATIC DIAGRAM, OUTPUT COMBINER FAULT CIRCUIT BAND I

20362373 REV 51

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS									
J2	C7	L6	E2						

REFERENCE DESIGNATIONS NOT USED									



ECN	DATE	BY				CHK	CHK	APPV'L
NEXT ASSY:			DRAFT	8/13/97	TAB	SCHEMATIC DIAGRAM, BANDPASS FILTER VHF CH 2-6		
			DR. CHK	8/22/97	CTT			
VERSION			M. ENGR					
MODEL			E. ENGR					
SCALE			RELEASE					

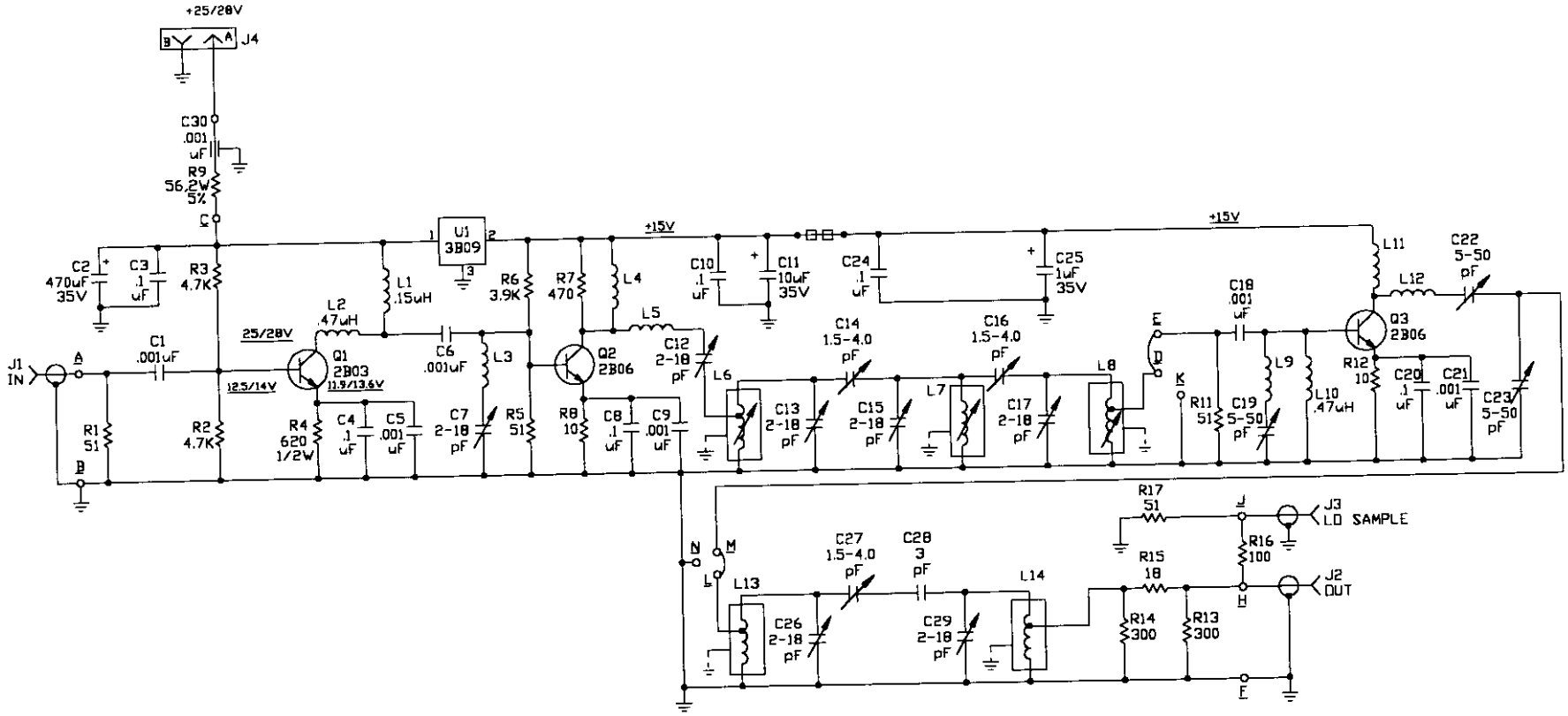
TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE
EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA. 18661

20362428 REV 51

SHEET 1 OF 1

NOTES : UNLESS OTHERWISE SPECIFIED
1-THE SYMBOL ⊣⊢ DENOTES A FERRITE BEAD.
2-ALL RESISTORS ARE 1/4W, 5%.
3-COMPONENTS J1,J2,J3,J4,R9 AND C30 ARE MOUNTED ON THE MODULE CAN.



REV	DATE	BY	DESCRIPTION			
D	3-16-94	VN	C11 WAS 47uF	C.T.T.	RGN	RGN
C	1-2-90	TAB	CHANGED TRANSISTORS VOLTAGES, ADDED J3,J4-R9 TO NOTE 3	C.T.T.	RGN	RGN
6796	7-5-89	CAB	ADDED RESISTOR R9	C.T.T.	RGN	RGN
ECN	DATE	BY		CHK	CHK	APPV'L

NEXT ASSY: SEE DASH No.	DRAFT	8-30-84	W.J.H.	SCHEMATIC DIAGRAM, X4 MULTIPLIER
PL C331-16-1,PL B331-19-1	DR. CHK	8-31-84	C.T.T.	
VERSION	M. ENGR			
MODEL	E. ENGR	4-25-86	JMJ	
SCALE N/A	RELEASE	4-25-86	JMJ	

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE — ELECTRONICS MISSILES & COMMUNICATIONS INC. WHITE HAVEN, PA. 18661

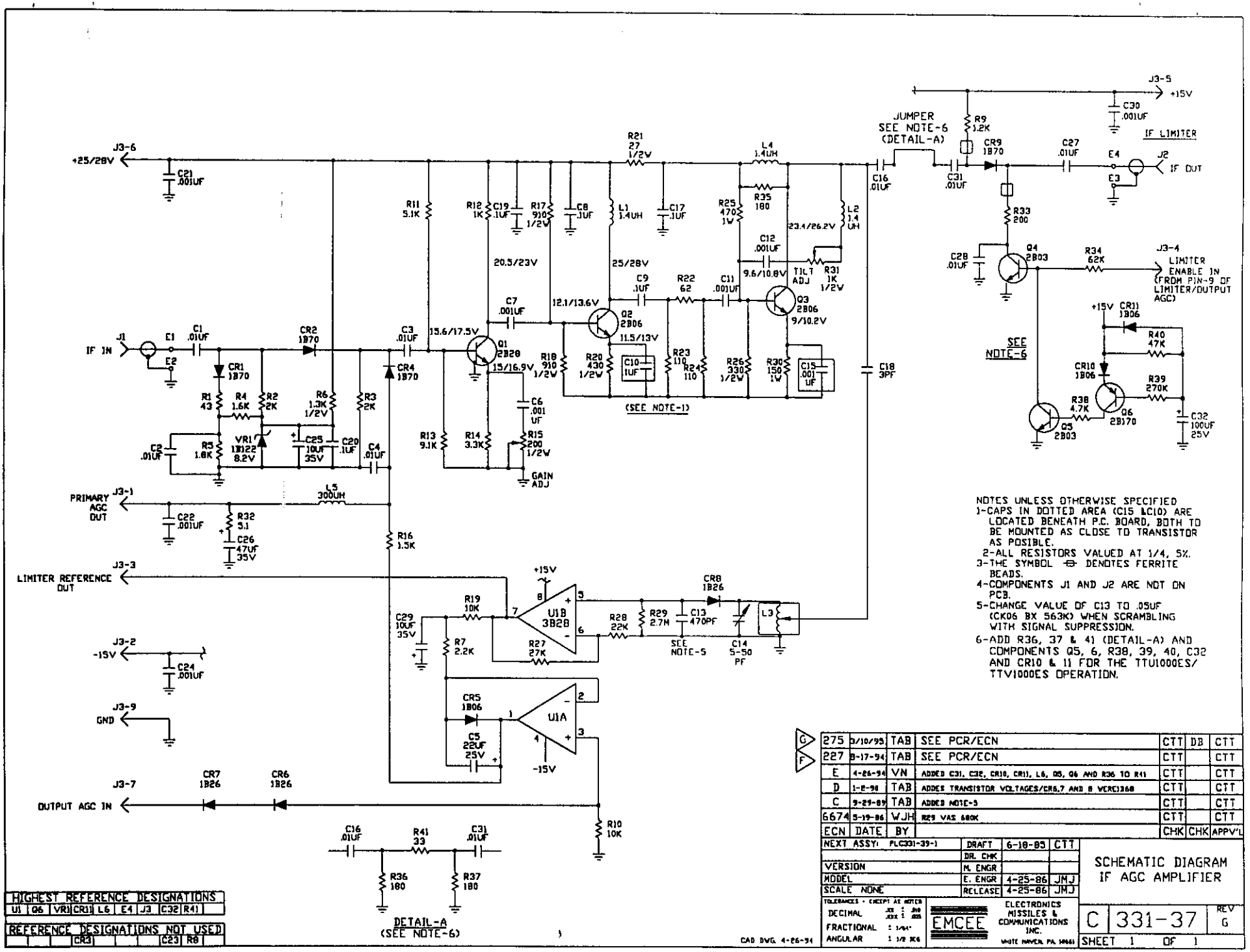
C 331-24 REV D

SHEET 1 OF 1

CAD DWG 10-9-95

HIGHEST REFERENCE DESIGNATIONS
C30 L14 R17 J4 Q3 U1

REFERENCE DESIGNATIONS NOT USED
R10



NOTES UNLESS OTHERWISE SPECIFIED
1-CAPS IN DOTTED AREA (C15 &C10) ARE LOCATED BENEATH P.C. BOARD, BOTH TO BE MOUNTED AS CLOSE TO TRANSISTOR AS POSIBLE.
2-ALL RESISTORS VALUED AT 1/4, 5%.
3-THE SYMBOL ⊖ DENOTES FERRITE BEADS.
4-COMPONENTS J1 AND J2 ARE NOT ON PCB.
5-CHANGE VALUE OF C13 TO .05UF (CK06 BX 563K) WHEN SCRAMBLING WITH SIGNAL SUPPRESSION.
6-ADD R36, 37 & 41 (DETAIL-A) AND COMPONENTS Q5, 6, R38, 39, 40, C32 AND CR10 & 11 FOR THE TTU1000ES/ TTV1000ES OPERATION.

G	275	5/10/95	TAB	SEE PCR/ECN	CTT	DB CTT
F	227	8-17-94	TAB	SEE PCR/ECN	CTT	CTT
	E	4-26-94	VN	ADDED C31, C32, CR10, CR11, L6, Q5, Q6 AND R36 TO R41	CTT	CTT
	D	1-2-94	TAB	ADDED TRANSISTOR VOLTAGES/CR6,7 AND 8 VER(1368	CTT	CTT
	C	9-29-89	TAB	ADDED NOTE-5	CTT	CTT
	6674	5-19-86	WJH	R29 WAS 680K	CTT	CTT
	ECN	DATE	BY		CHK	CHK APPV'L

NEXT ASSY: PLC331-39-1	DRAFT	6-18-85	CTT
	DR. CHK		
VERSION	M. ENGR		
MODEL	E. ENGR	4-25-86	JMJ
SCALE NONE	RELEASE	4-25-86	JMJ

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE — ELECTRONICS MISSILES & COMMUNICATIONS INC. WHITE HAVEN, PA 18661

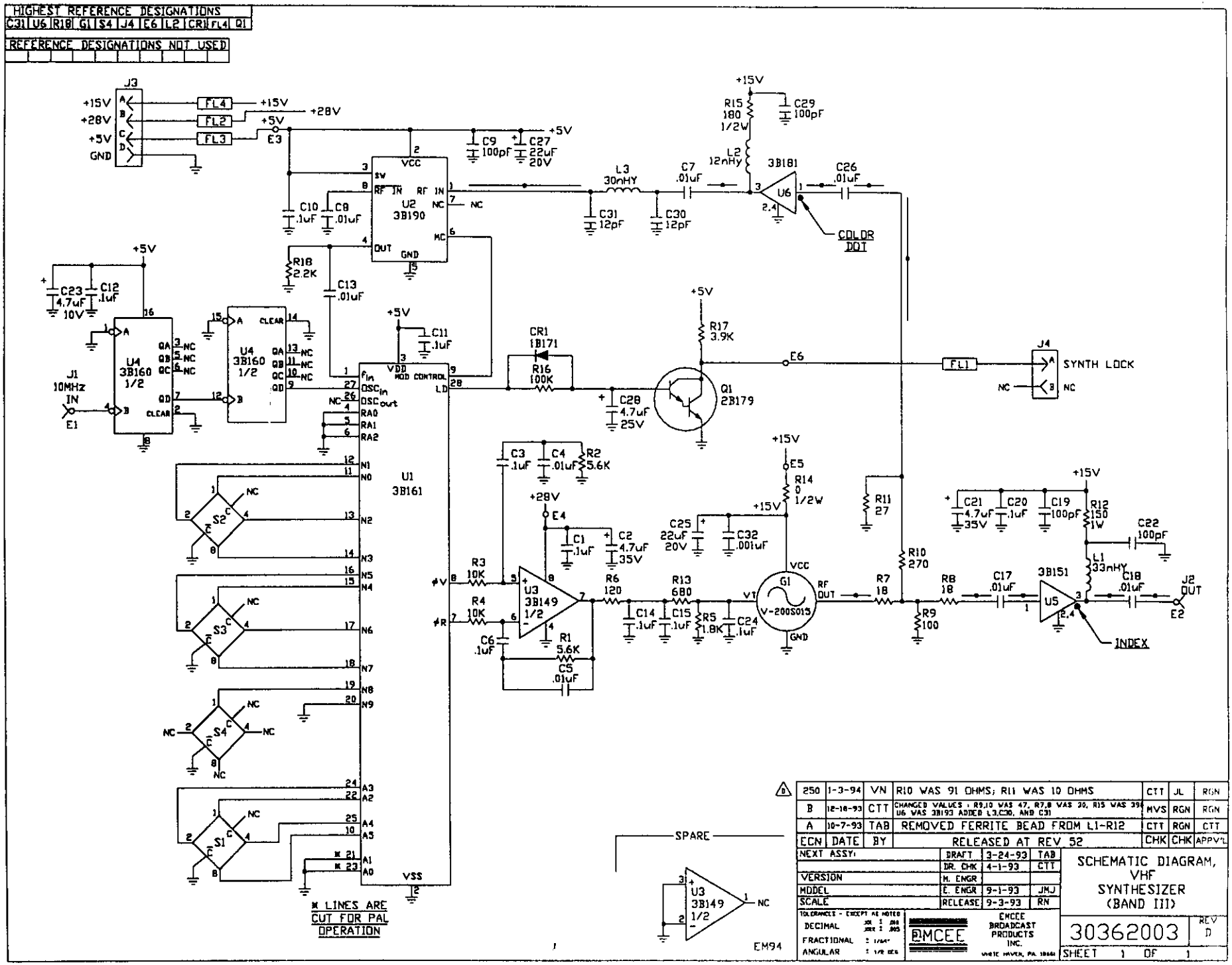
SCHEMATIC DIAGRAM IF AGC AMPLIFIER

C | 331-37 | REV G

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS
U1 | Q6 | VR1 | CR11 | L6 | E4 | J3 | C32 | R41

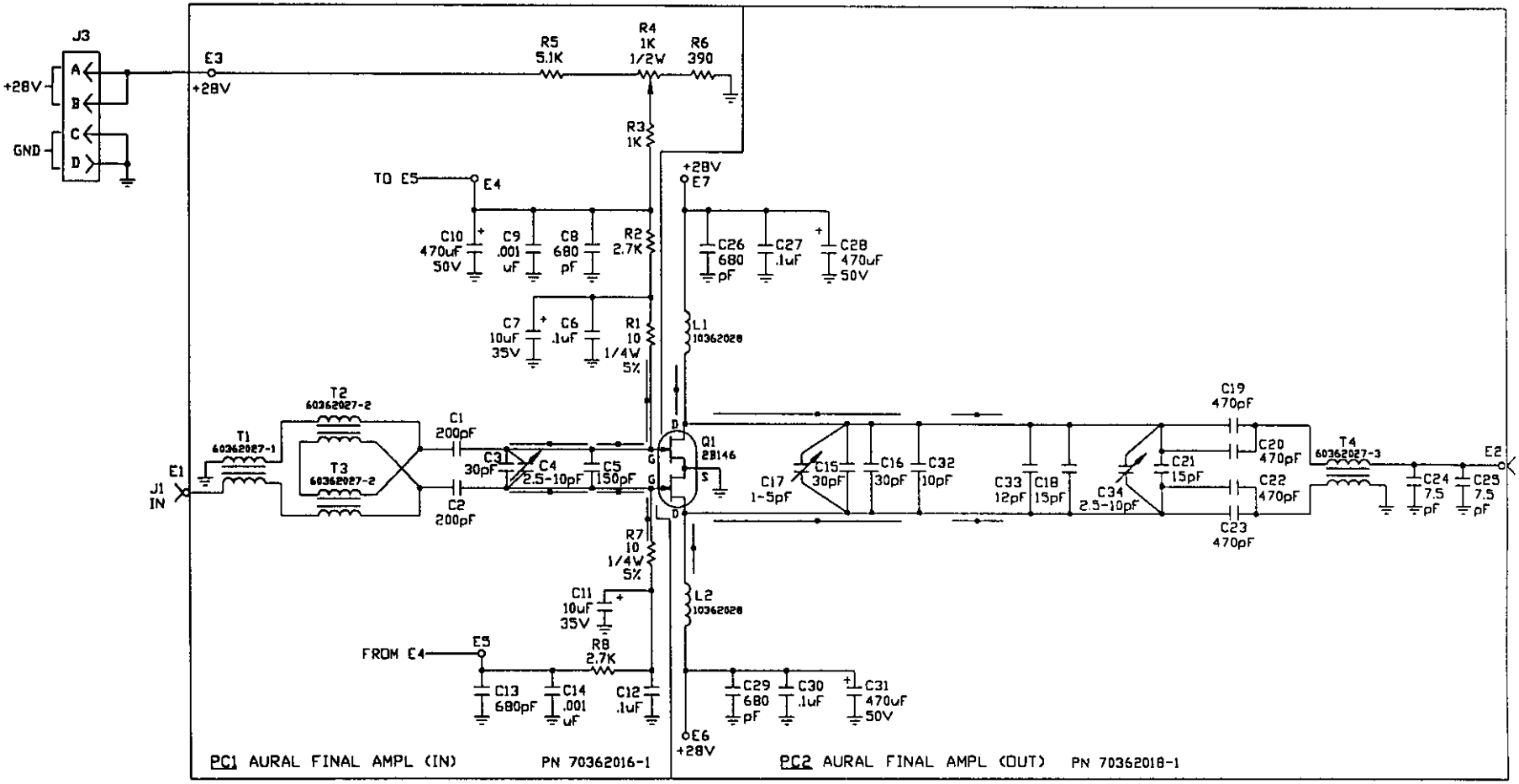
REFERENCE DESIGNATIONS NOT USED
CR3 | C23 | R8


HIGHEST REFERENCE DESIGNATIONS
C31 U6 R18 G1 S4 J4 E6 L2 CR1 FL4 Q1
REFERENCE DESIGNATIONS NOT USED
J3
+15V
+28V
+5V
GND
FL4
FL2
FL3
E3
U2
3B190
VCC
RF IN
RF IN
NC
OUT
GND
C9 100pF
C27 22uF 20V
C10 .1uF
C8 .01uF
L3 30nHY
C7 .01uF
C31 12pF
C30 12pF
R15 180 1/2W
L2 12nHy
C29 100pF
3B181
U6
C26 .01uF
COLOR DOT
R18 2.2K
C13 .01uF
C23 4.7uF 10V
C12 .1uF
U4 3B160 1/2
J1 10MHz IN
E1
U4 3B160 1/2
CLEAR
C11 .1uF
VDD
MOD CONTROL
LD
CR1 1B171
R16 100K
R17 3.9K
C28 4.7uF 25V
Q1 2B179
E6
FL1
J4
SYNTH LOCK
U1 3B161
C3 .1uF
C4 .01uF
R2 5.6K
E5
R14 0 1/2W
E4
C1 .1uF
C2 4.7uF 35V
C25 22uF 20V
C32 .001uF
R11 27
C21 4.7uF 35V
C20 .1uF
C19 100pF
R12 150 1W
C22 100pF
L1 33nHY
R3 10K
R4 10K
U3 3B149 1/2
R6 120
R13 680
R5 1.8K
C14 .1uF
C15 .1uF
C24 .1uF
C6 .1uF
R1 5.6K
C5 .01uF
G1
V-200S013
VCC
VT
RF OUT
GND
R10 270
R7 18
R8 18
R9 100
C17 .01uF
3B151
U5
C18 .01uF
J2 OUT
E2
INDEX
S1
S2
S3
S4
* LINES ARE CUT FOR PAL OPERATION
SPARE
U3 3B149 1/2
EM94
250 1-3-94 VN R10 WAS 91 OHMS; R11 WAS 10 OHMS CTT JL RGN
B 12-18-93 CTT CHANGED VALUES : R9,10 WAS 47, R7,8 WAS 30, R15 WAS 39 U6 WAS 3B193 ADDED L3,C30, AND C31 MVS RGN RGN
A 10-7-93 TAB REMOVED FERRITE BEAD FROM L1-R12 CTT RGN CTT
ECN DATE BY RELEASED AT REV 52 CHK CHK APPVL
NEXT ASSY:
VERSION
MODEL
SCALE
DRAFT 3-24-93 TAB
DR. CHK 4-1-93 CTT
M. ENGR
E. ENGR 9-1-93 JMJ
RELEASE 9-3-93 RN
TOLERANCES - EXCEPT AS NOTED
DECIMAL
FRACTIONAL
ANGULAR
EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA. 18661
SCHEMATIC DIAGRAM, VHF SYNTHESIZER (BAND III)
30362003
REV D
SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS								
C34	T4	L2	Q1	J3	E7	R8	PC2	FL1

REFERENCE DESIGNATIONS NOT USED

NOTES: UNLESS OTHERWISE SPECIFIED.
1- COMPONENTS J1, 2, 3, FL1, AND Q1 ARE NOT PART OF PC BOARDS' ASSEMBLIES.



ECN	DATE	BY				CHK	CHK	APPV'L
NEXT ASSY:			DRAFT	3/19/93	TAB	SCHEMATIC DIAGRAM, AURAL FINAL AMPLIFIER, BAND III		
			DR. CHK					
VERSION			M. ENGR					
MODEL			E. ENGR					
SCALE			RELEASE					

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010, .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

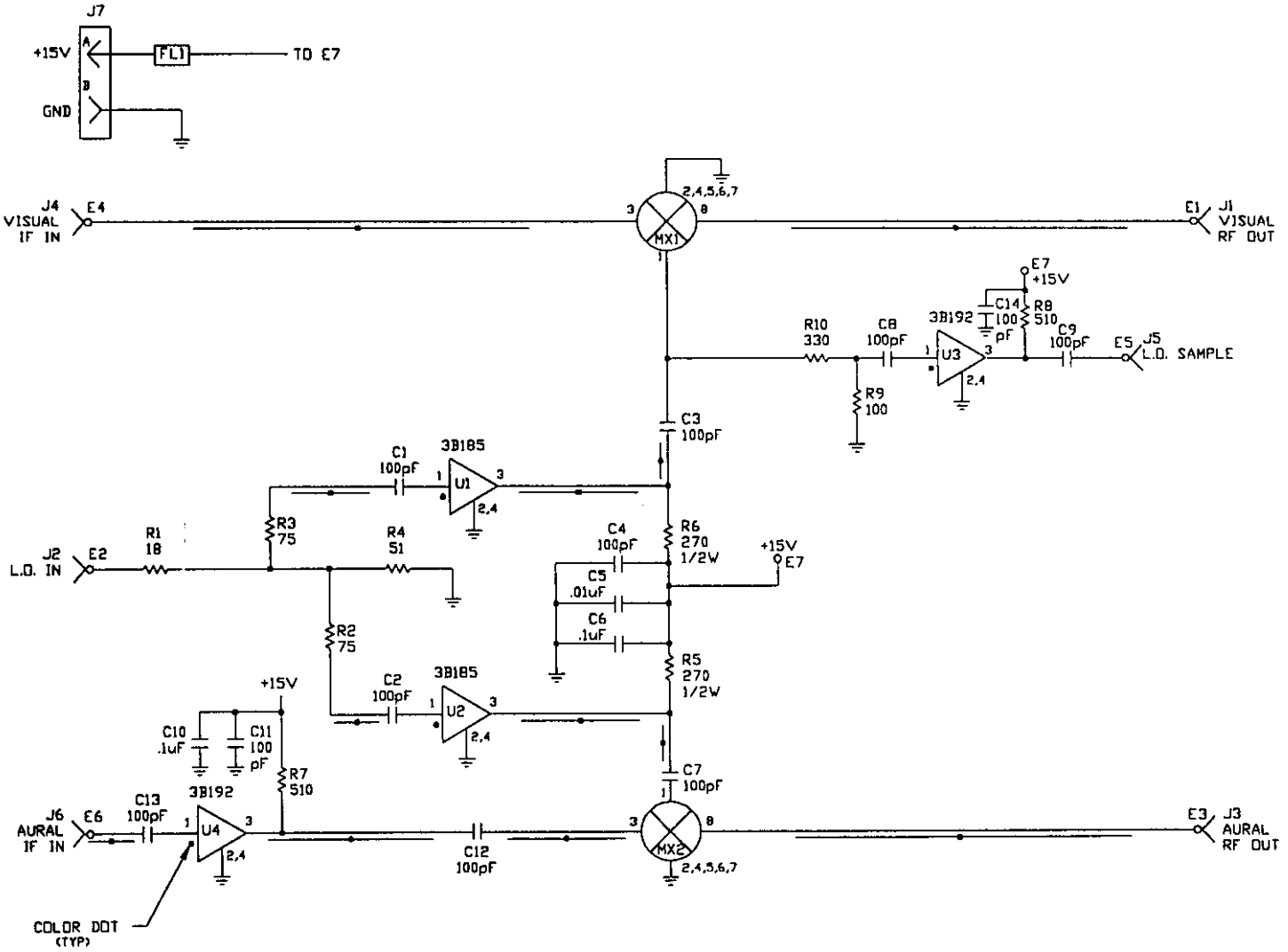
EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA 18661

30362014 REV 56

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS									
C14	E7	R10	MX2	U4					

REFERENCE DESIGNATIONS NOT USED									



ECN	DATE	BY		CHK	CHK	APPV'L
NEXT ASSY:			DRAFT	3-17-93	TAB	
			DR. CHK	6-3-93	CFT	
VERSION			M. ENGR			
MODEL			E. ENGR			
SCALE			RELEASE			

TOLERANCES - EXCEPT AS NOTED
DECIMAL XX ± .01 XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE
ELECTRONICS MISSILES & COMMUNICATIONS INC.
WHITE HAVEN, PA 18661

SCHEMATIC DIAGRAM, L.O. AMPLIFIER SPLITTER AND MIXER

30362024 REV 53

SHEET 1 OF 1

EM109

HIGHEST REFERENCE DESIGNATIONS								
C15	Q2	J2	R7	L4	T1	E6	FL2	

"PC1"

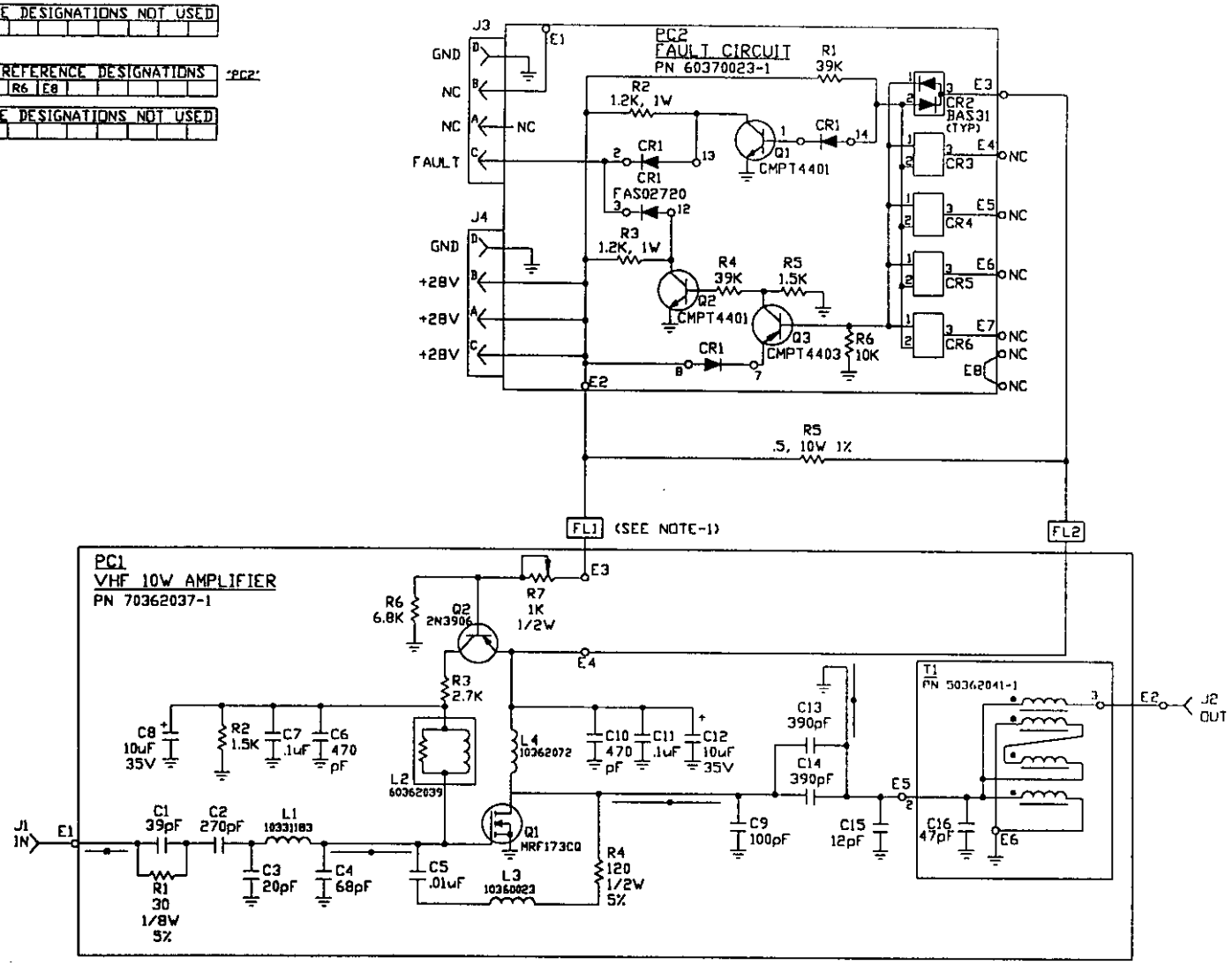
REFERENCE DESIGNATIONS NOT USED								

HIGHEST REFERENCE DESIGNATIONS								
CR6	Q3	J4	R6	E8				

"PC2"

REFERENCE DESIGNATIONS NOT USED								

NOTES: UNLESS OTHERWISE SPECIFIED.
1- COMPONENTS J1, J2, Q1, C5, C16, R5, FL1 AND FL2 ARE NOT LOCATED ON PC BOARD ASSEMBLIES.



55	12/16/94	TAB	E5 WAS E4	CTT	RGN	RGN
ECN	DATE	BY	RELEASED AT REV 55	CHK	CHK	APPV'L

NEXT ASSY:	DRAFT	8-23-93	TAB
	DR. CHK	6-8-94	CTT
VERSION	M. ENGR		
MODEL	E. ENGR	6-14-95	RGN
SCALE	RELEASE	6-14-95	RGN

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA 18661

SCHEMATIC DIAGRAM, AURAL DRIVER AMPLIFIER

30362035 REV 55

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS								
C30	E8	J2	L4	Q3	R16	T2	Z2	FL4	CR6

REFERENCE DESIGNATIONS NOT USED									
E2	E4								

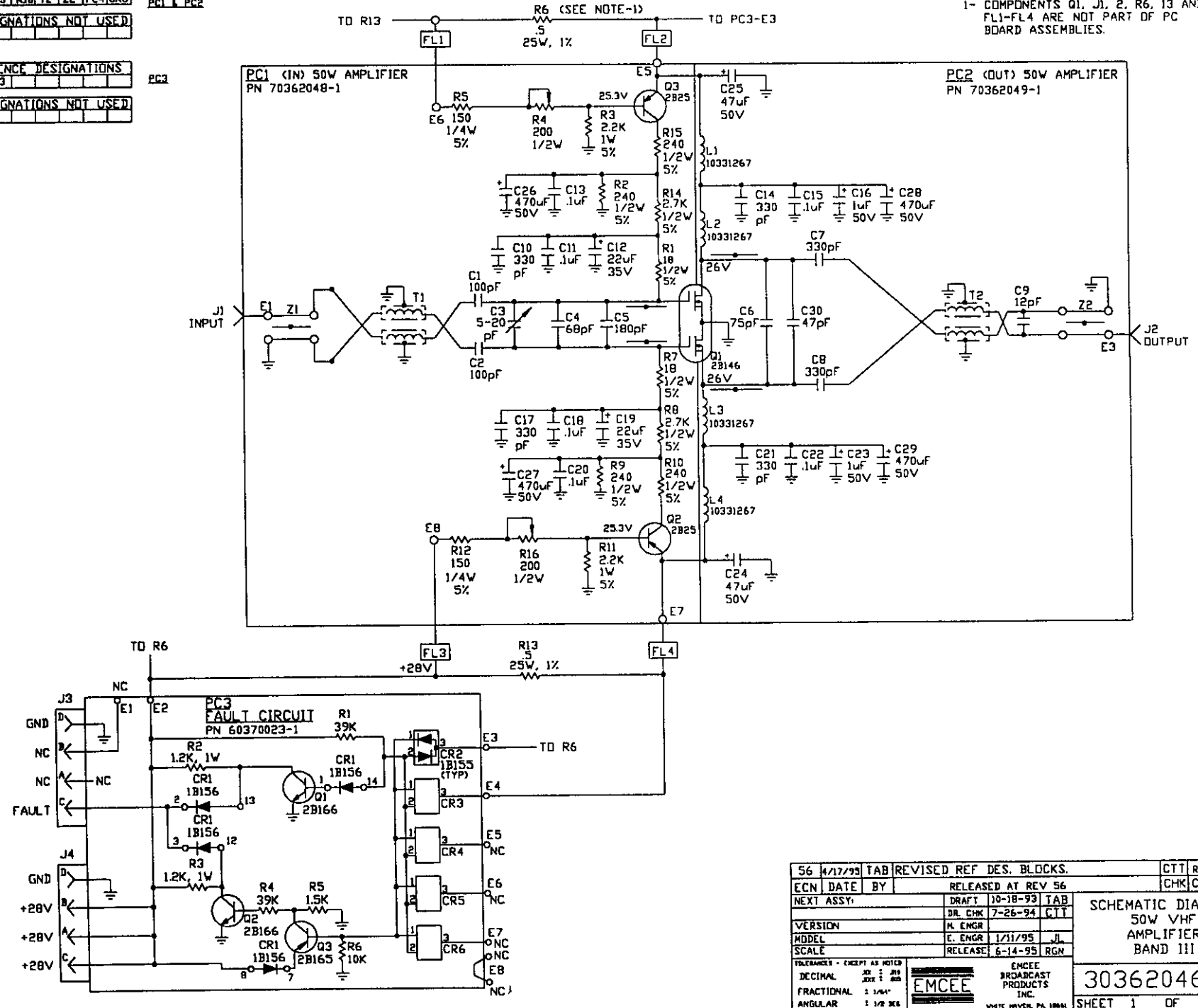
PC1 & PC2

HIGHEST REFERENCE DESIGNATIONS									
CR6	E8	J4	R6	Q3					

REFERENCE DESIGNATIONS NOT USED									
J1	J2								

PC3

NOTES: UNLESS OTHERWISE SPECIFIED.
1- COMPONENTS Q1, J1, 2, R6, 13 AND FL1-FL4 ARE NOT PART OF PC BOARD ASSEMBLIES.



ECN	DATE	BY	RELEASED AT REV 56			CHK	CHK	APPV'L
56	4/17/95	TAB	REVISED REF DES. BLOCKS.			CTT	RGN	RGN
NEXT ASSY:			DRAFT	10-18-93	TAB			
			DR. CHK	7-26-94	CTT			
VERSION			M. ENGR					
MODEL			E. ENGR	1/11/95	JL			
SCALE			RELEASE	6-14-95	RGN			

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .03 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE BROADCAST PRODUCTS INC.
WHITE RIVER, PA 19061

SCHEMATIC DIAGRAM, 50W VHF AMPLIFIER BAND III

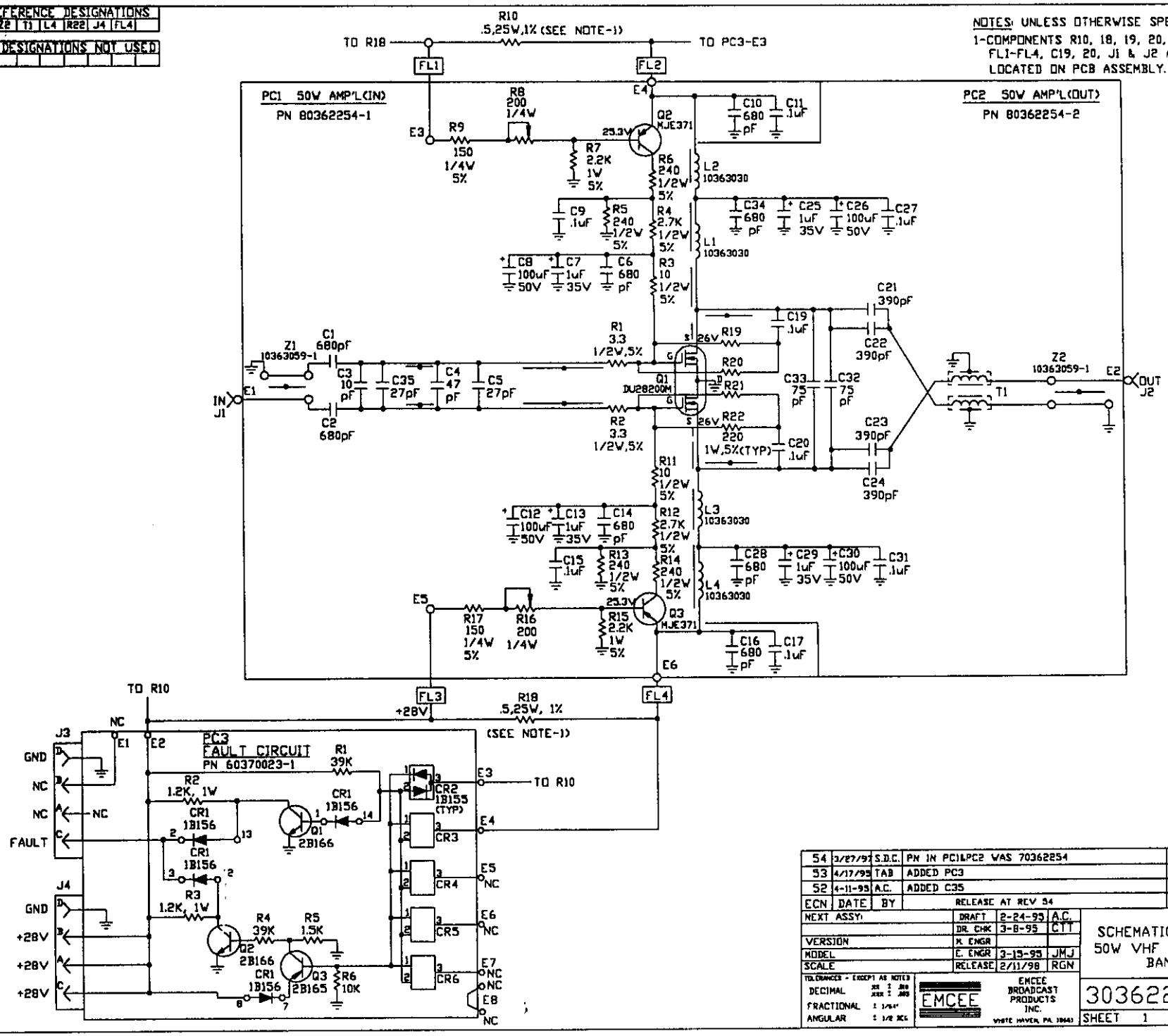
30362046 REV 56

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS							
E6	Q3	C35	Z2	T1	L4	R22	J4	FL4

REFERENCE DESIGNATIONS NOT USED								

NOTES: UNLESS OTHERWISE SPECIFIED.
1-COMPONENTS R10, 18, 19, 20, 21, 22, Q1, FL1-FL4, C19, 20, J1 & J2 ARE NOT LOCATED ON PCB ASSEMBLY.



ECN	DATE	BY		CHK	CHK	APPV'L
54	3/27/97	S.D.C.	PN IN PC1&PC2 WAS 70362254	CTT		RGN
53	4/17/95	TAB	ADDED PC3	CTT		RGN
52	4-11-95	A.C.	ADDED C35	CTT		RGN
			RELEASE AT REV 54			

NEXT ASSY:	DRAFT	2-24-95	A.C.
	DR. CHK	3-8-95	CTT
VERSION	M. ENGR		
MODEL	E. ENGR	3-15-95	JMJ
SCALE	RELEASE	2/11/98	RGN

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA. 18661

SCHEMATIC DIAGRAM, 50W VHF AMPLIFIER BAND I

30362252 REV 54

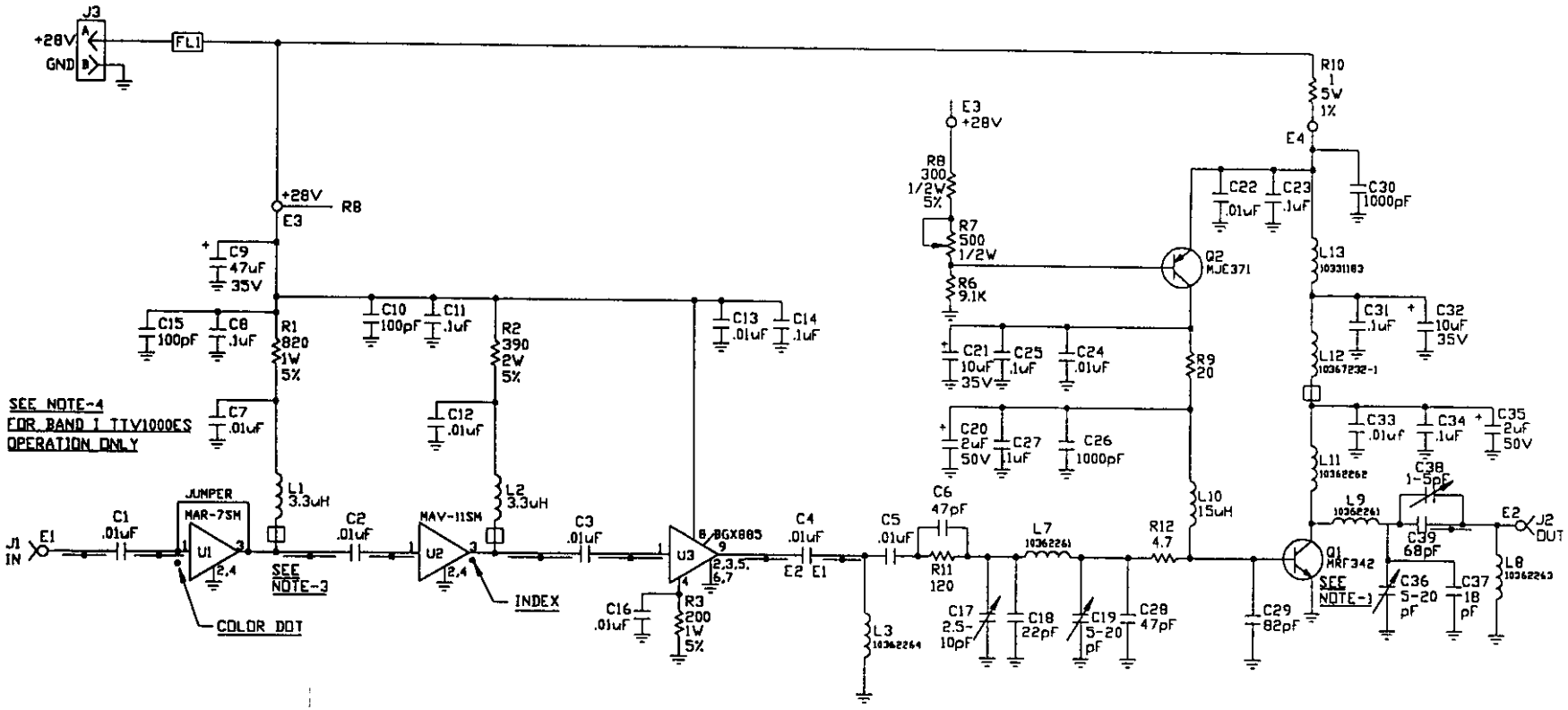
SHEET 1 OF 1

PC1

HIGHEST REFERENCE DESIGNATIONS									
U3	Q2	C39	R12	L13	FL1	E5	J3		

REFERENCE DESIGNATIONS NOT USED									

NOTES: UNLESS OTHERWISE SPECIFIED.
1-COMPONENTS J1, 2, 3, FL1, U3, Q1, 2, C29 AND R9 ARE NOT ON PC BOARD ASSEMBLIES.
2-ALL RESISTORS VALUED AT 1/4W, 5%.
3-THE SYMBOL ⊟ INDICATES FERRITE BEADS.
4-REMOVE U1, L1, C7, 8, 15, AND R1 AND ADD JUMPER AS SHOWN.



ECN	DATE	BY		CHK	CHK	APPV'L
419	10/16/97	A.C.	ADDED NOTE-4			

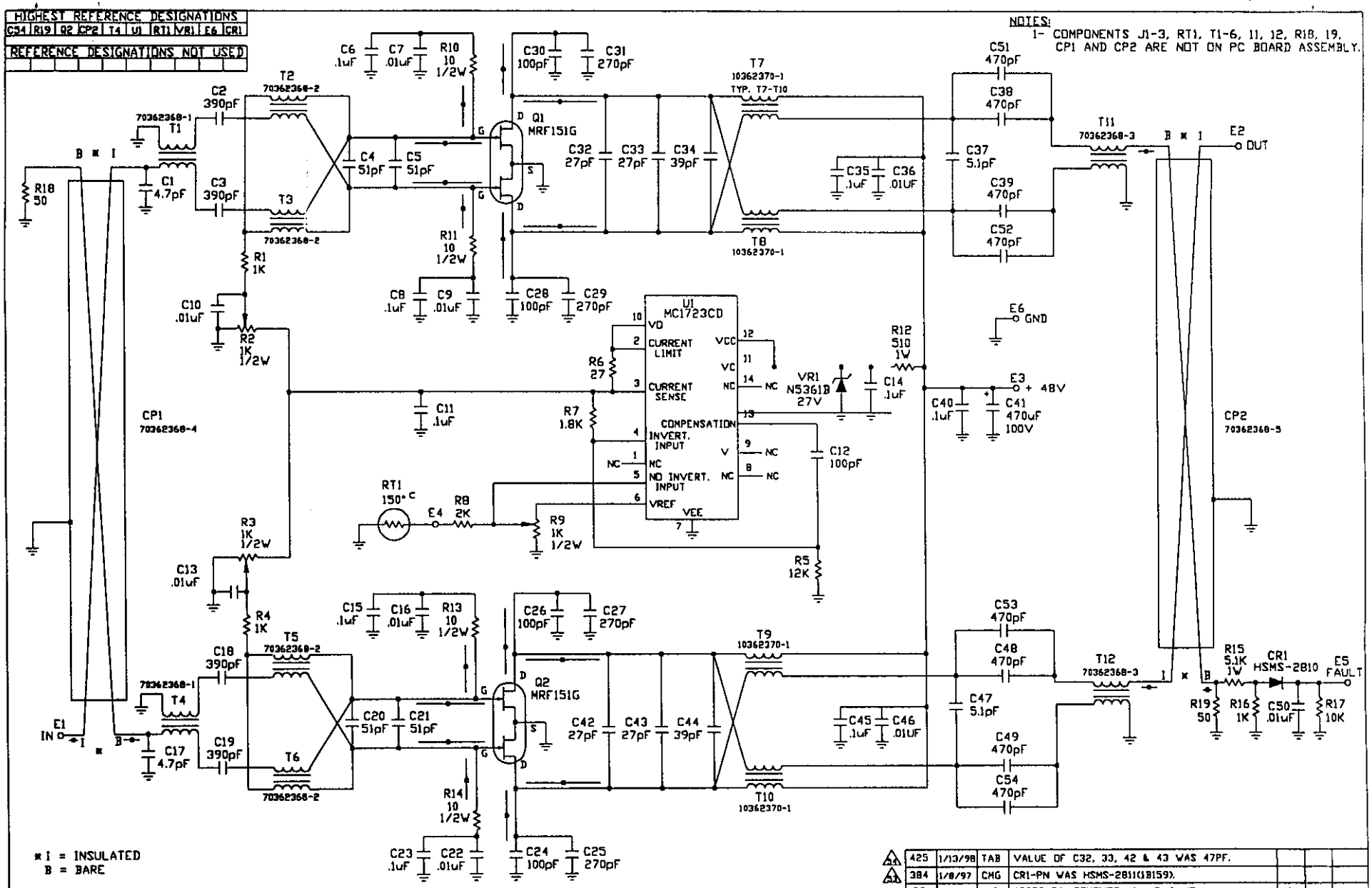
NEXT ASSY:	DRAFT	3/2/95	TAB	SCHEMATIC DIAGRAM, 2W VHF AMPLIFIER
	DR. CHK	8/28/98	C.T.T	
VERSION	M. ENGR			
MODEL	E. ENGR			
SCALE	RELEASE			

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .01, .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA 18661

30362257 REV 52

SHEET 1 OF 1



ECN	DATE	BY		CHK	CHK	APPV'L
425	1/13/98	TAB	VALUE OF C32, 33, 42 & 43 WAS 47PF.			
384	1/8/97	CMG	CR1-PN WAS HSMS-2811(1B159).			
52	11/8/95	A.C.	ADDED E6, REMOVED J1, J2, & J3.	C.T.T.		

NEXT ASSY:		DRAFT	9/25/95 A.C.
		DR. CHK	11-8-95 C.T.T.
VERSION		M. ENGR	
MODEL	EG & G	E. ENGR	
SCALE		RELEASE	

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .01 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE BROADCAST PRODUCTS INC. WHITE HAVEN, PA 18661

SCHEMATIC DIAGRAM, 300W FINAL VISUAL AMPLIFIER, BAND III

30362367 REV 54

SHEET 1 OF 1

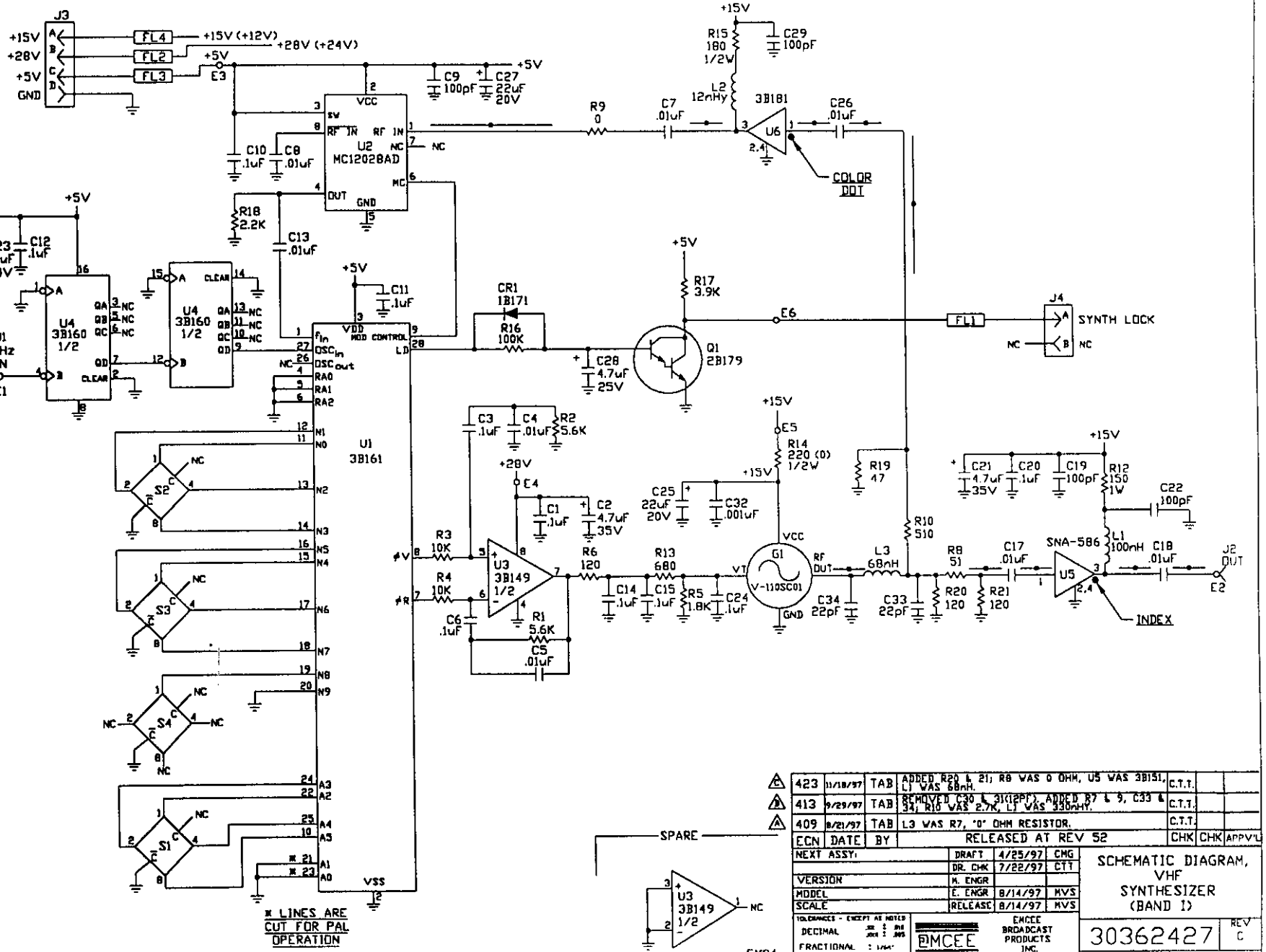
HIGHEST REFERENCE DESIGNATIONS

C34	U6	R21	G1	S4	J4	E6	L3	CR1	FL4	Q1

REFERENCE DESIGNATIONS NOT USED

C30	C31	R11	R7							

NOTE:
1-VALUES IN PARENTHESIS ARE FOR RSVA2 OPERATION.



ECN	DATE	BY	
423	11/18/97	TAB	ADDED R20 & 21; R8 WAS 0 OHM, U5 WAS 3B151, L1 WAS 68nH. C.T.T.
413	9/29/97	TAB	REMOVED C30 & 31(12PF), ADDED R7 & 9, C33 & 34, R10 WAS 2.7K, L1 WAS 330nHY. C.T.T.
409	8/21/97	TAB	L3 WAS R7, "0" OHM RESISTOR. C.T.T.
			RELEASED AT REV 52 CHK

NEXT ASSY:	DRAFT	4/25/97	CMG
	DR. CHK	7/22/97	CTT
VERSION	M. ENGR		
MODEL	E. ENGR	8/14/97	MVS
SCALE	RELEASE	8/14/97	MVS

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .01 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE BROADCAST PRODUCTS INC. WHITE HAVEN, PA 18661

SCHEMATIC DIAGRAM, VHF SYNTHESIZER (BAND I)

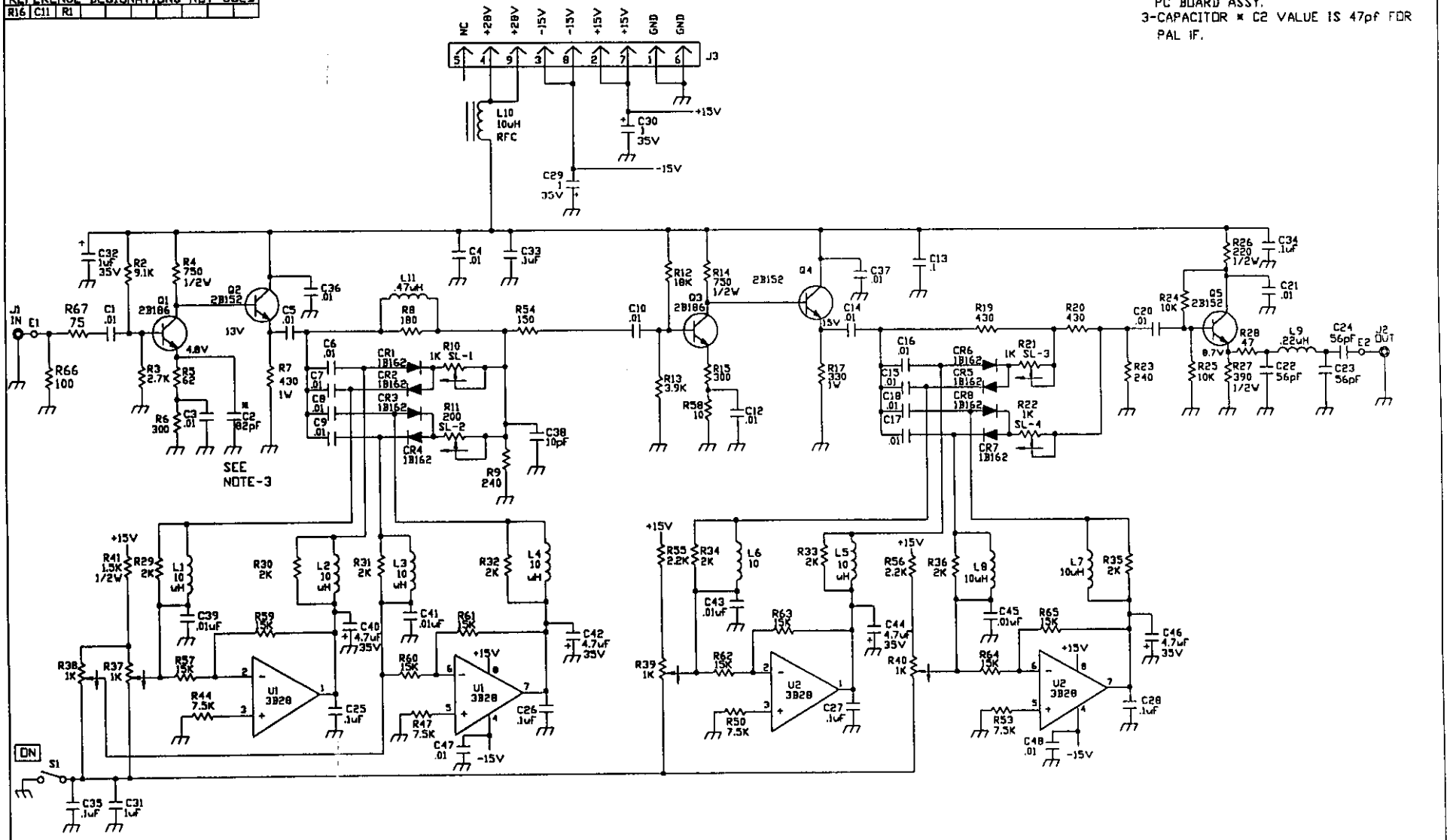
30362427 REV C

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS									
C48	CR8	R67	Q5	L11	J3	E2			

REFERENCE DESIGNATIONS NOT USED									
R16	C11	R1							

NOTES : UNLESS OTHERWISE SPECIFIED
1-ALL CAPACITORS ARE VALUED IN uF.
2-CONNECTORS J1 & J2 ARE NOT ON PC BOARD ASSY.
3-CAPACITOR * C2 VALUE IS 47pf FOR PAL IF.



ECN	DATE	BY	RELEASED AT REV 60			CHK	CHK	APPV'L
NEXT ASSY:			DRAFT	10-13-93	TAB			
			DR. CHK	10-14-93	CTT			
VERSION			M. ENGR					
MODEL			E. ENGR	11-10-93	JL			
SCALE			RELEASE	6-14-95	RGN			

TOLERANCES - EXCEPT AS NOTED
DECIMAL XX ± .03 XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE
ELECTRONICS MISSILES & COMMUNICATIONS INC.
WHITE HAVEN, PA. 18661

SCHEMATIC DIAGRAM, LINEARIZER

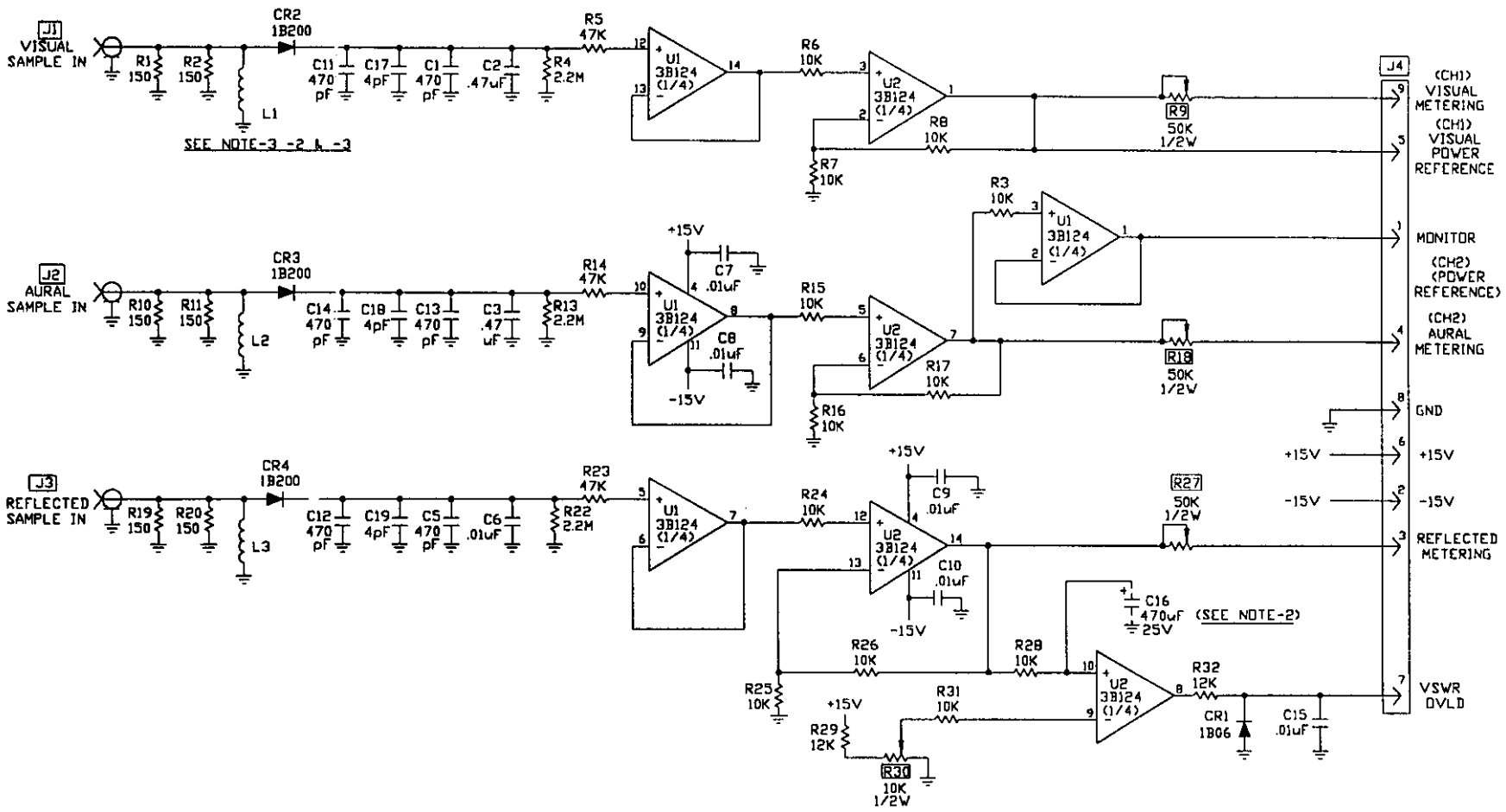
30367078 REV 60

SHEET 1 OF 1

HIGHEST REFERENCE DESIGNATIONS									
R35	C19	U2	CR4	J4	L3				

REFERENCE DESIGNATIONS NOT USED									
	R12	R21							

NOTES: UNLESS OTHEWISE SPECIFIED.
1-COMPONENTS CR1, C2, R9, R18, R27, AND R30 ARE NOT SURFACE MOUNTED.
2-WHEN USING ON OTHER THAN HS EQUIPMENT, C16 AND L1, L2, & L3 ARE ELIMINATED.
3-COILS L1,2 & 3 ARE STRIP LINE RUNS.



ECN	DATE	BY		CHK	CHK	APPV'L
P	384	3/8/97	CMG	CR2, 3, 4 WERE 1B159 (PN HSMS-2811).	CTT		RGN
	N	10/28/96	CMG	R26 WAS 4.7K.	CTT	DB	DB
M	352	7/9/96	A.C.	ADDED RUN FROM R3 TO U2-7. L1-L3 WAS PN. 10368443-1. MODIFIED NOTE-1 & 2.	CTT	DB	DB
L	345	5-7-96	VN	ADDED C17,18,19, L1,2,3 AND NOTE-3	CTT	DB	DB
	K	10-17-95	CT	ADDED C16 TO NOTE 2	CTT	FC	CTT
J	287	6/15/95	TAB	REMOVED R33, 34, & 35; ADDED SITE CONTROLLER TO NOTE-2.	CTT	FC	CTT
H	224	8-16-94	TAB	ADDED R33, 34, & 35	CTT		CTT
G	217	7-15-94	VN	ADDED C15	CTT		CTT
	F	10-28-93	TAB	UPDATED NOTE-2	CTT		CTT
	160	7-28-93	TAB	SEE PCR/ECN	CTT	BN	BN
	150	5-26-93	TAB	SEE PCR/ECN	CTT	BN	BN
	C	2-26-91	CTT	ADDED R3, AND RUN FROM J4-1 TO U1-1	BN		BN
	B	2-14-91	TAB	VALUE OF R26 WAS 10K	BN		
	A	10-26-90	TAB	U1 & U2 WERE 3B72		PJS	BN

NEXT ASSY:		DRAFT	6-26-90	SMP
		DR. CHK	7-12-90	CTT
VERSION		M. ENGR		
MODEL		E. ENGR	10-4-90	DB
SCALE		RELEASE	10-5-90	JMJ

TOLERANCES - EXCEPT AS NOTED
DECIMAL .XX ± .010 .XXX ± .005
FRACTIONAL ± 1/64"
ANGULAR ± 1/2 DEG

EMCEE BROADCAST PRODUCTS INC.
WHITE HAVEN, PA 18661

SCHEMATIC DIAGRAM, METERING DETECTOR

30368024 REV P

SHEET 1 OF 1

U9A, U9B, diodes CR3, CR4, CR5 and CR6 form a precision AC/DC converter circuit. The circuit converts the AC audio into a DC signal to operate the front panel deviation meter. First the output is fed into U10 which provides the necessary voltage gain and level translation. R58 is a zeroing control that sets the lower end of the scale on the deviation meter, R56 is used for the higher end.

The 41.25 MHz VCO consists of amplifier U8, tank circuit L4, and capacitors in the U8 output circuit. Varactor diode CR2 is used in the tuned circuit as the voltage variable element. The modulating audio circuit is fed from the arm of deviation control R44 through R45 to CR2. The operating frequency of the VCO is determined by L4, C40, C44, C47, C48, and CR2. L4 is the VCO center frequency adjustment on the circuit board.

The VCO output, from L4, is fed to buffer amplifier U7 which provides gain and isolates the VCO circuitry. The R38 level adjustment in the U7 circuit sets the modulator IF output to +40 dBmV at rear panel connector J9, (AURAL OUT). L7, C52 and C53 is a parallel tuned resonant circuit adjusted to 41.25 MHz. The tuned circuit matches the U7 output to 75 ohms.

A sample of the VCO 41.25 MHz signal is taken off directional tap T1 and is fed through amplifier Q5 to PLL synthesizer U4. The PLL synthesizer also takes inputs from PLD U5 and a countdown circuit. The PLD delivers a clock frequency and necessary reference data to the synthesizer from a crystal oscillator in the video module. A 45.75 MHz unmodulated reference signal is fed into the U2, U3 countdown circuit. The output of the countdown circuit is sent to "osc in" on the PLL synthesizer. The PLL synthesizer generates an error voltage which is sent back to varactor diode CR2 to lock the VCO output frequency. Thus the 41.25 MHz system is locked to the 45.75 MHz reference.

Two on board regulators provide +15 and +5 V output and regulate against current and input voltage variations. The main +5 V is isolated from the digital +5 V for noise reduction purposes.

4.4 Video Modulator

Refer to the schematic diagram Figure 4-4 for circuit design and to Figure 2-5 for switch and jumper options locations. The Video Modulator module accepts a baseband video input and generates a 45.75 MHz visual IF carrier as the primary output.

The video input, from the rear panel connector J5 (VIDEO IN), is fed into the two-stage feedback amplifier Q1 and Q2. This amplifier provides a high input impedance to the video source, and buffers the input video signal from the video module circuits
Variable resistor R6 is a factory adjustment, together with C1; their purpose is to boost the high end of the video response curve. In series with R6, R7 is the factory adjusted video modulation calibration control. R7 calibrates the front panel video modulation control to 87.5% at 1 V video input peak-to-peak.

The R7 output is fed to the Q3/Q4 feedback amplifier which serves as a buffer between the input video and the phase equalizer network. Video is then fed to the front panel VIDEO MODULATION control R15. Q5 and Q6 form a feedback pair amplifier that provides frequency shaping in conjunction with R19 and C14.

The Q5 /Q6 output goes to the main video amplifier, Q7, Q8, Q9 and Q10. This amplifier provides video drive to the diode modulator stage.

The sync tip clamp, and white level clipper circuits are associated with the output video amplifier. The sync tip clamp circuit references the sync tips to a specific DC reference level.

The white level clipper limits the white level amplitude so that over modulation of the video carrier does not take place.

The sync tip clamp circuit consist of U1, Q11, Q12. The white level clipper consist of Q13, CR1, CR2.

For sync tip operation, a reference voltage is fed to pin 1

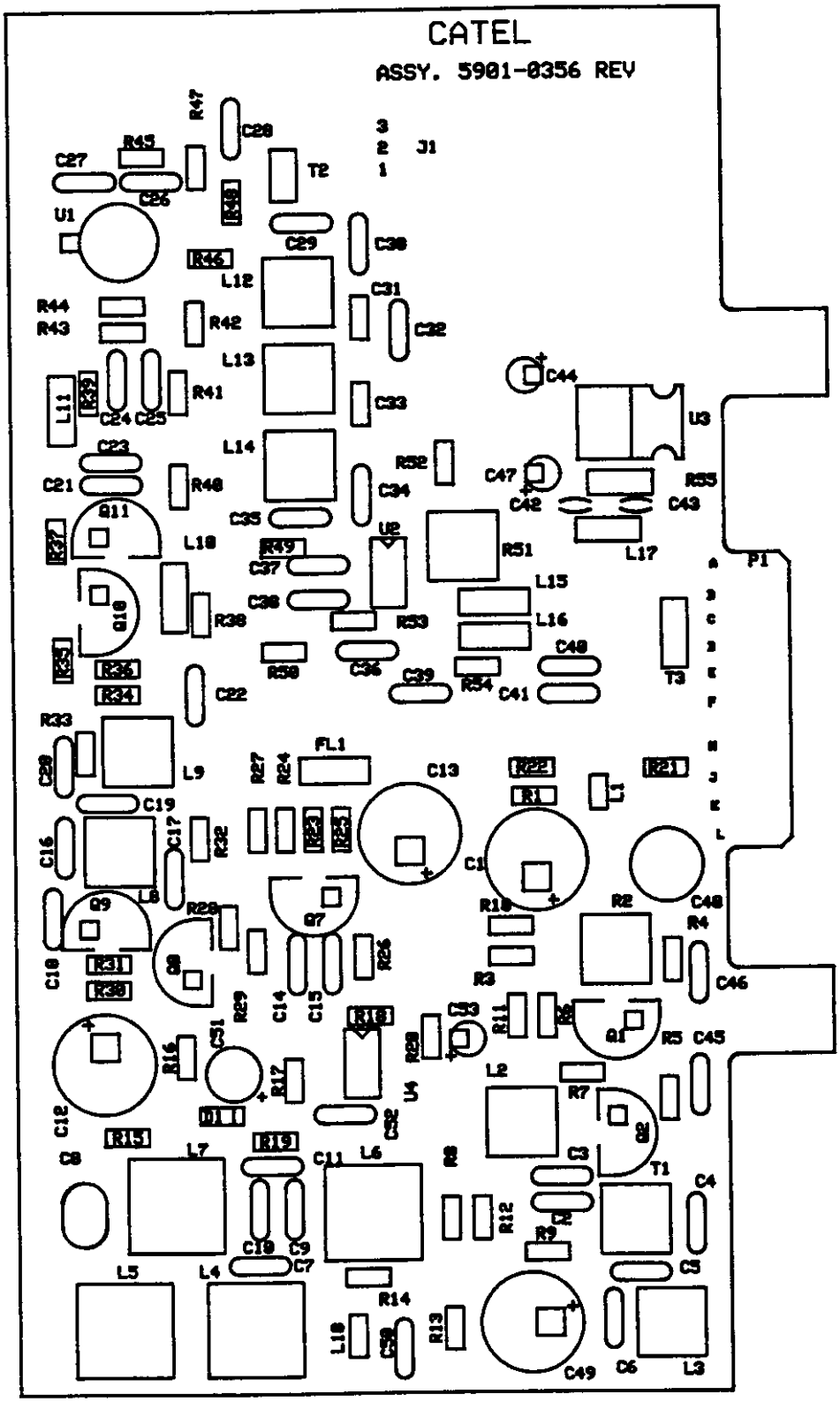


Figure 5-4
PCB Parts Location Diagram
Aural Subcarrier Processor

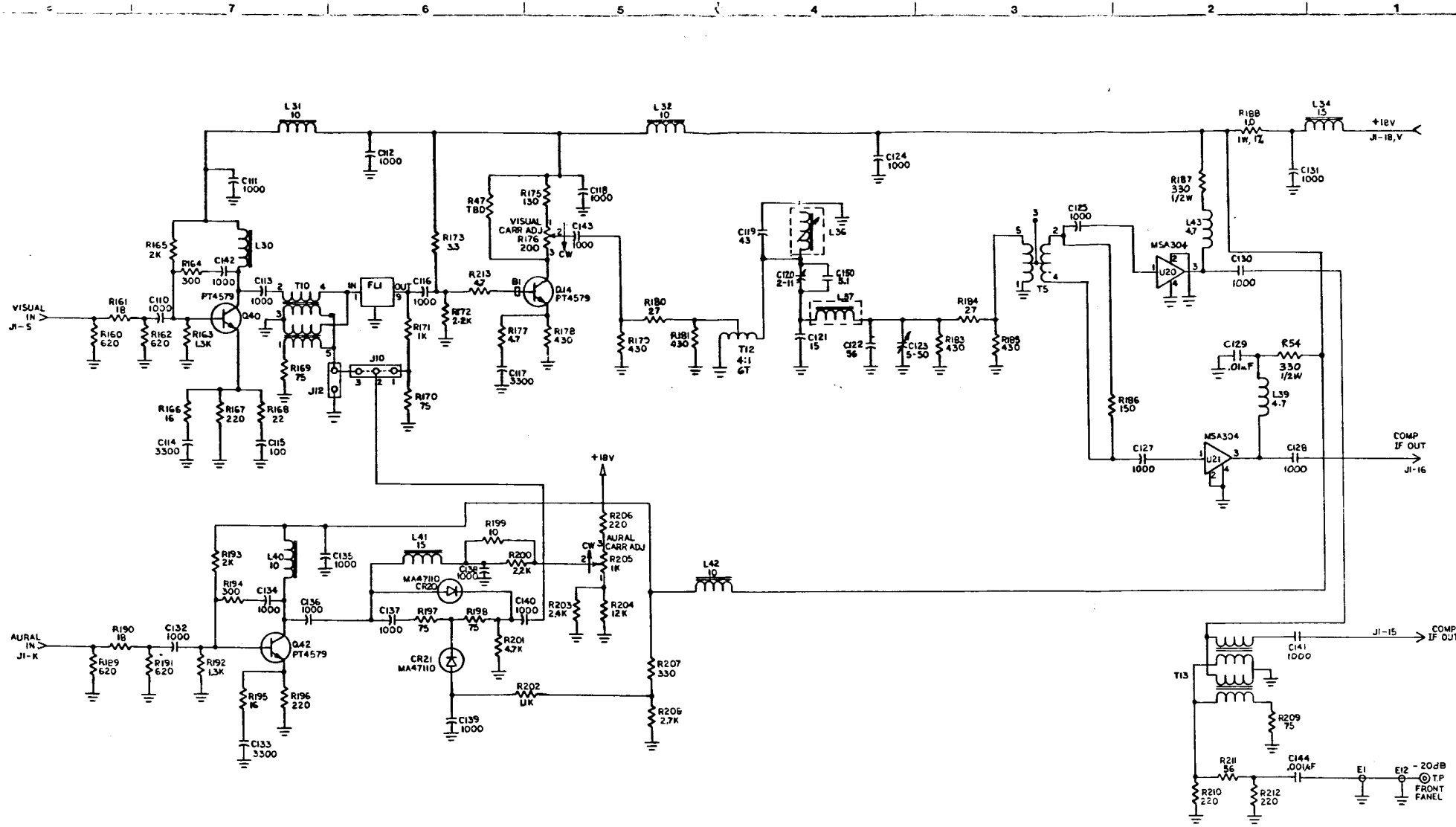


Figure 4-4
Schematic Diagram, Video Modulator
4 of 4

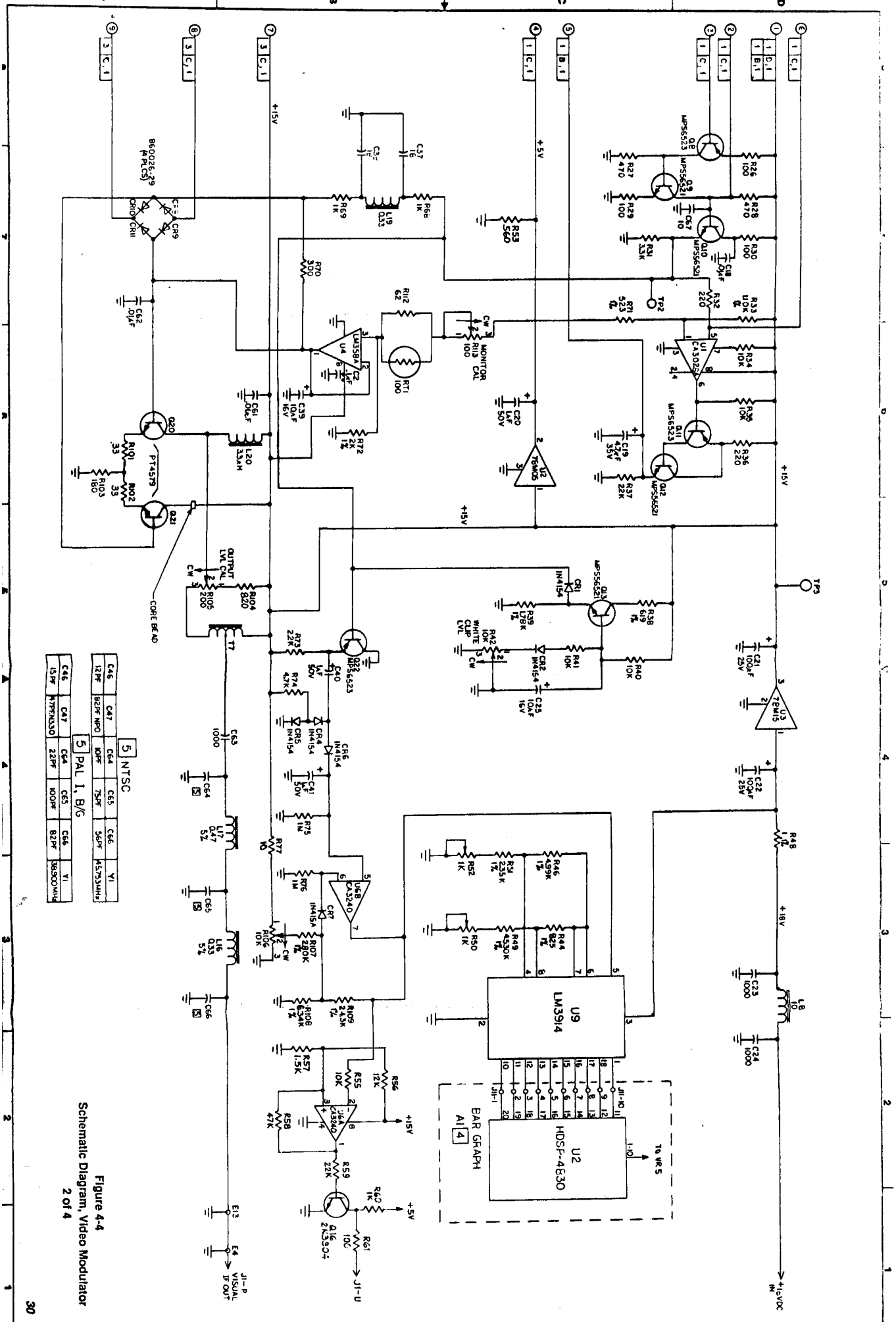


Figure 4-4
Schematic Diagram, Video Modulator
2 of 4

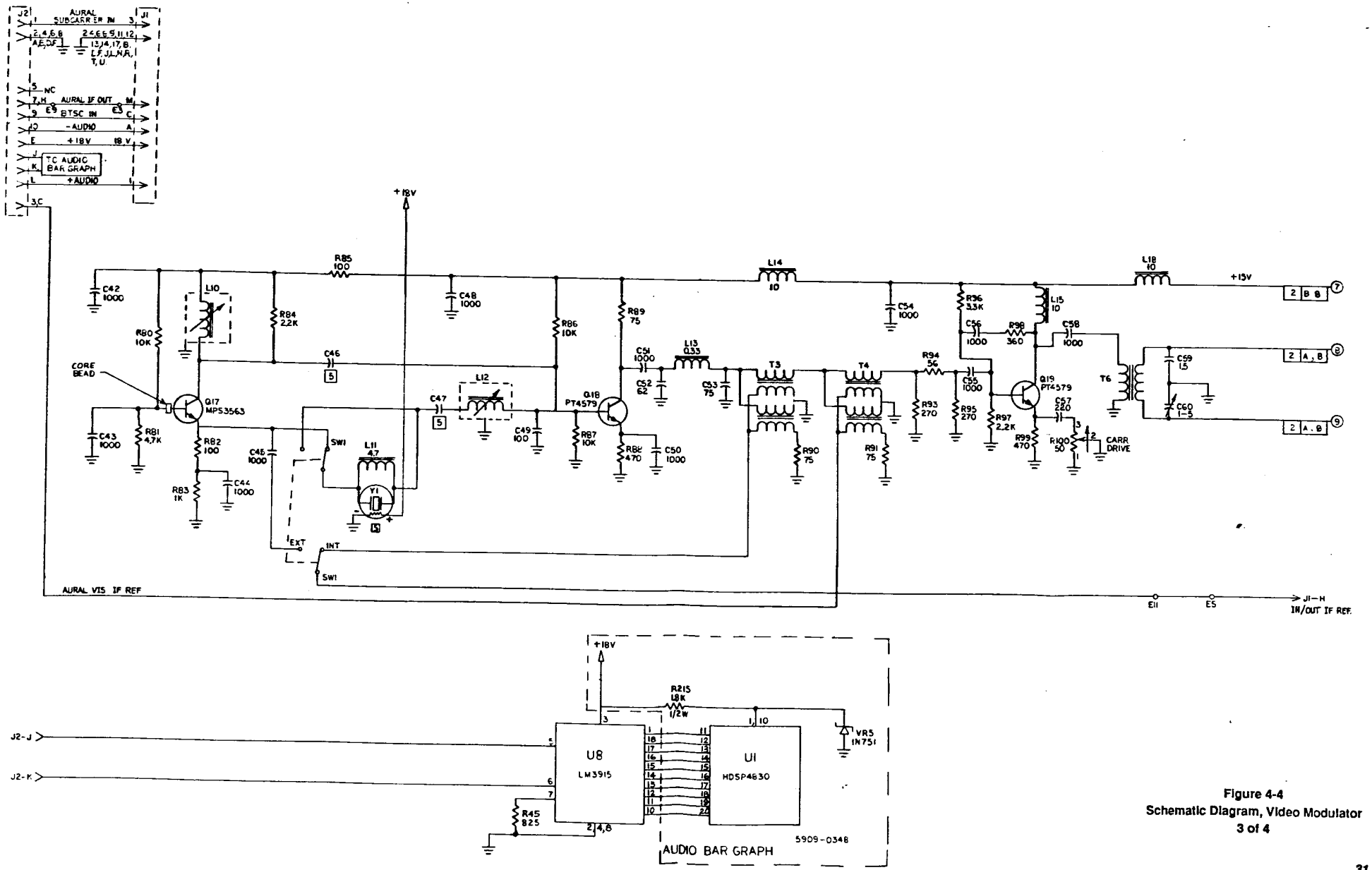


Figure 4-4
Schematic Diagram, Video Modulator
3 of 4

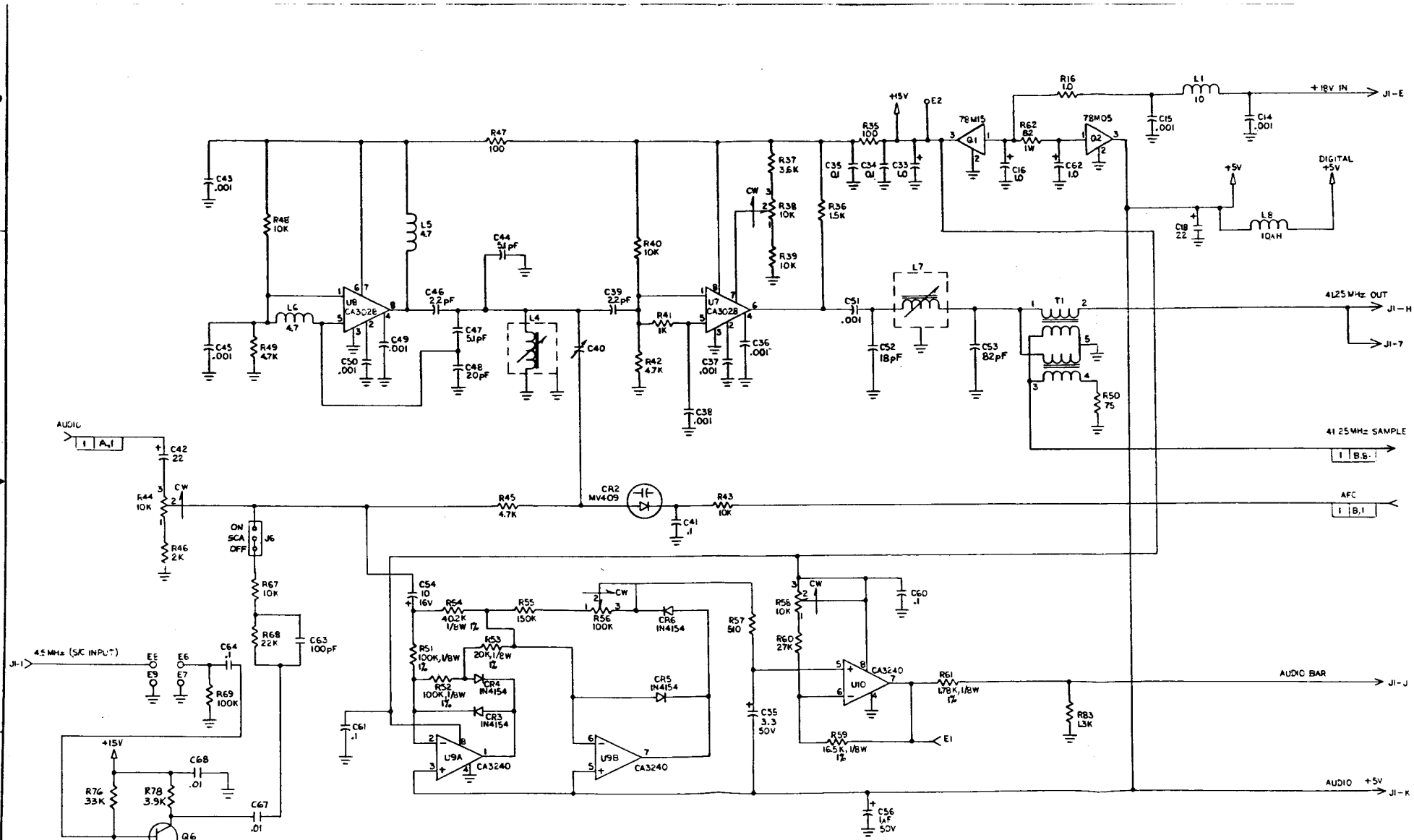
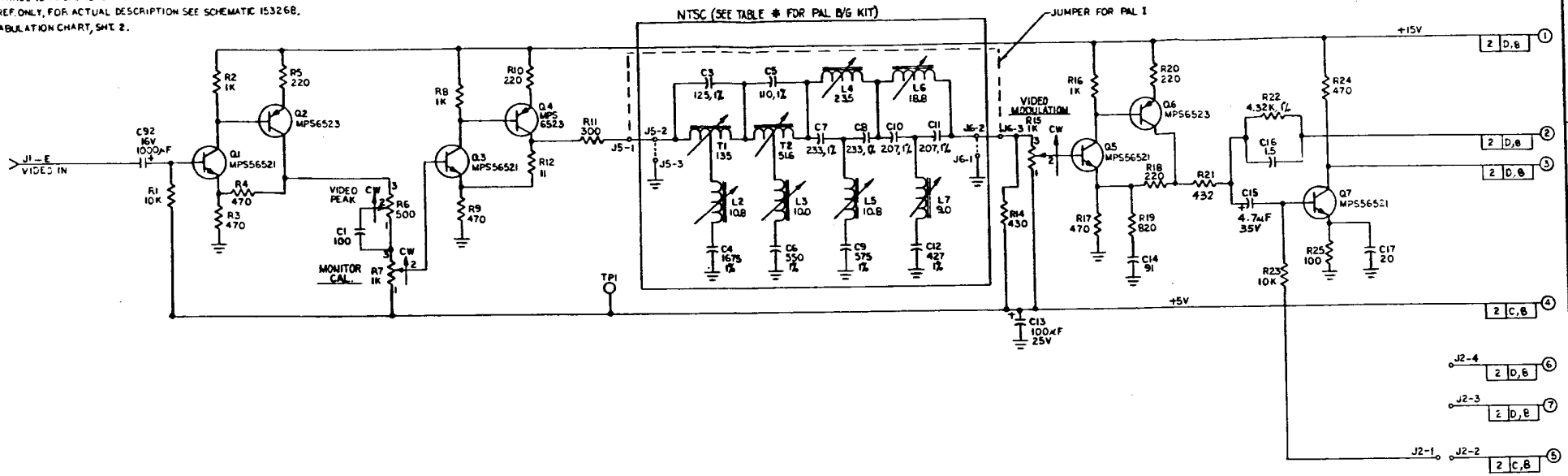


Figure 4-3
Schematic Diagram, Audio Modulator
2 of 2

SPECIAL NOTES

1. RESISTANCE IS IN OHMS, 1/4 W, 5%.
2. CAPACITANCE IS IN PICOFARADS.
3. INDUCTANCE IS IN MICROHENRIES.
4. A1 IS REF. ONLY, FOR ACTUAL DESCRIPTION SEE SCHEMATIC 153268.
5. SEE TABULATION CHART, SHT. 2.



*KIT FOR PAL B/G

C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
138	1465	153	453	113	113	278	315	315	129
T1	T2	L2	L3	L4	L5	L6	L7	L10	L12
131.9	40.74	12.4	13.8	17.3	14.1	9.6	14.1		

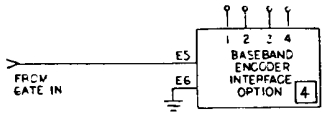
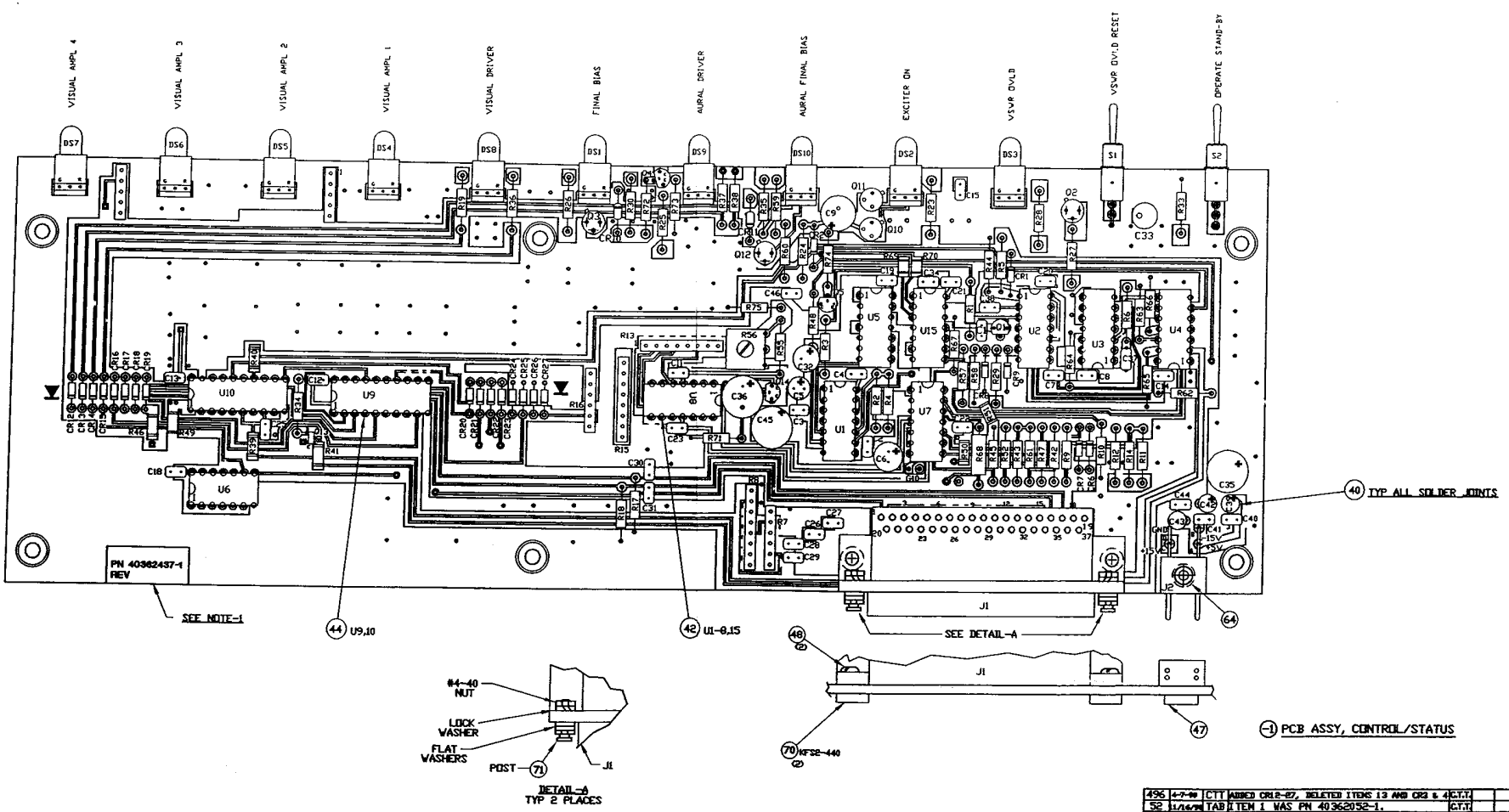


Figure 4-4
Schematic Diagram, Video Modulator
1 of 4

NOTE:

1- MARK REV LEVEL PER SHEET 1 OF 1 AND SPEC A232-107-3.



-1 PCB ASSY, CONTROL/STATUS

ECN	DATE	BY	
496	4-7-97	CTT	ADDED CR16-27, DELETED ITEMS 13 AND CR3 & 4
52	1/16/98	TAB	ITEM 1 WAS PN 40362052-1.

C.T.T. CHK CHK APPVL

NEXT ASSY		DRAFT 8-5-97	C.T.T.
VERSION		DR. CHK	
MODEL		M. ENGR	
SCALE 2/1 AT 3MG FULL SIZE		E. ENGR 9/4/97	KVS
		RELEASE	

TOLERANCES - EXCEPT AS NOTED
DECIMAL
FRACTIONAL
ANGULAR

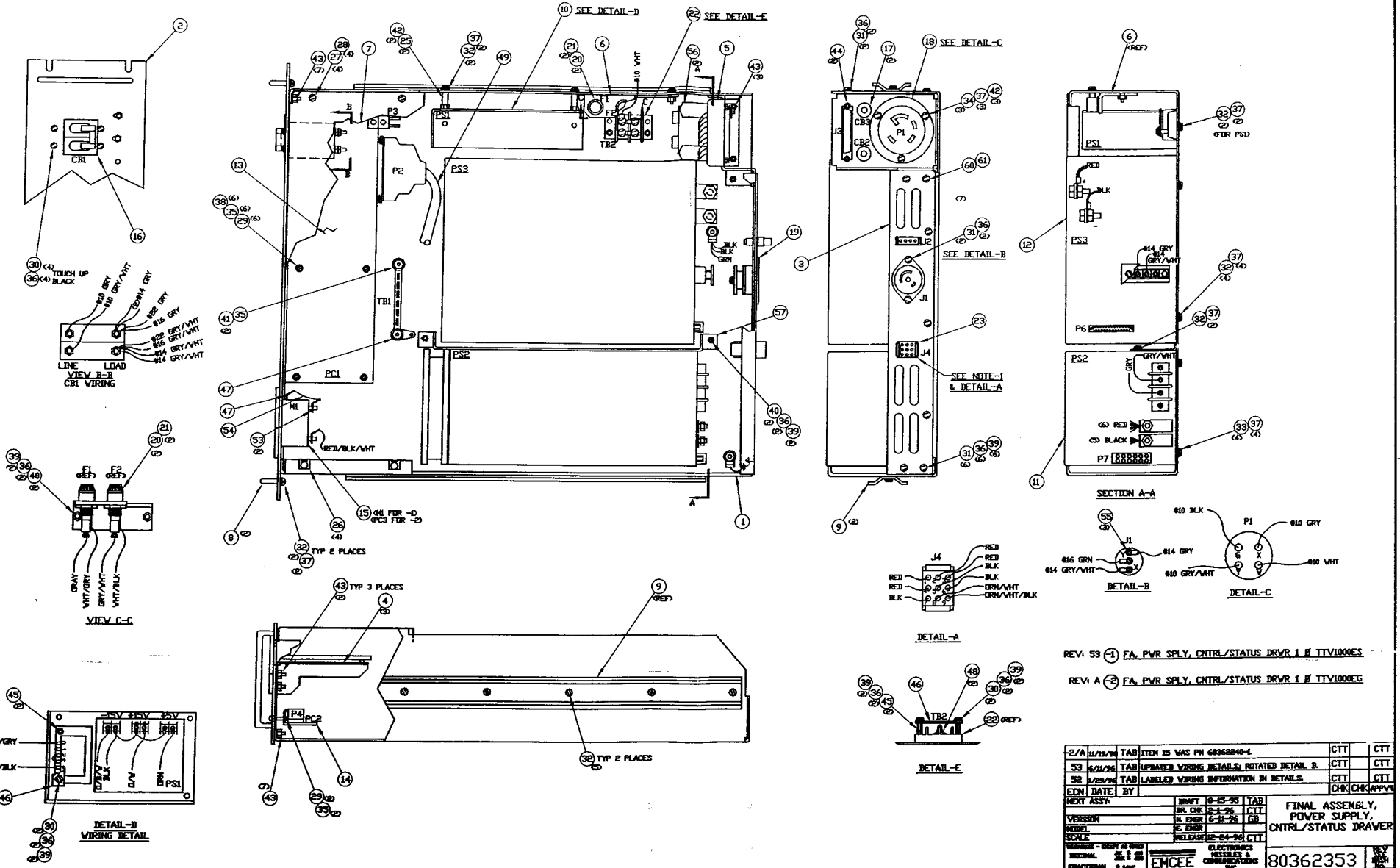
EMCEE — EXCEE BROADCAST PRODUCTS INC.

PCB ASSEMBLY, CONTROL/STATUS (TTV1000ES)

40362437 REV 52

SHEET 1 OF 1

NOTE: UNLESS OTHERWISE SPECIFIED.
1- INSTALL J4 ON HARNESS AFTER INSTALLING REAR PANEL.

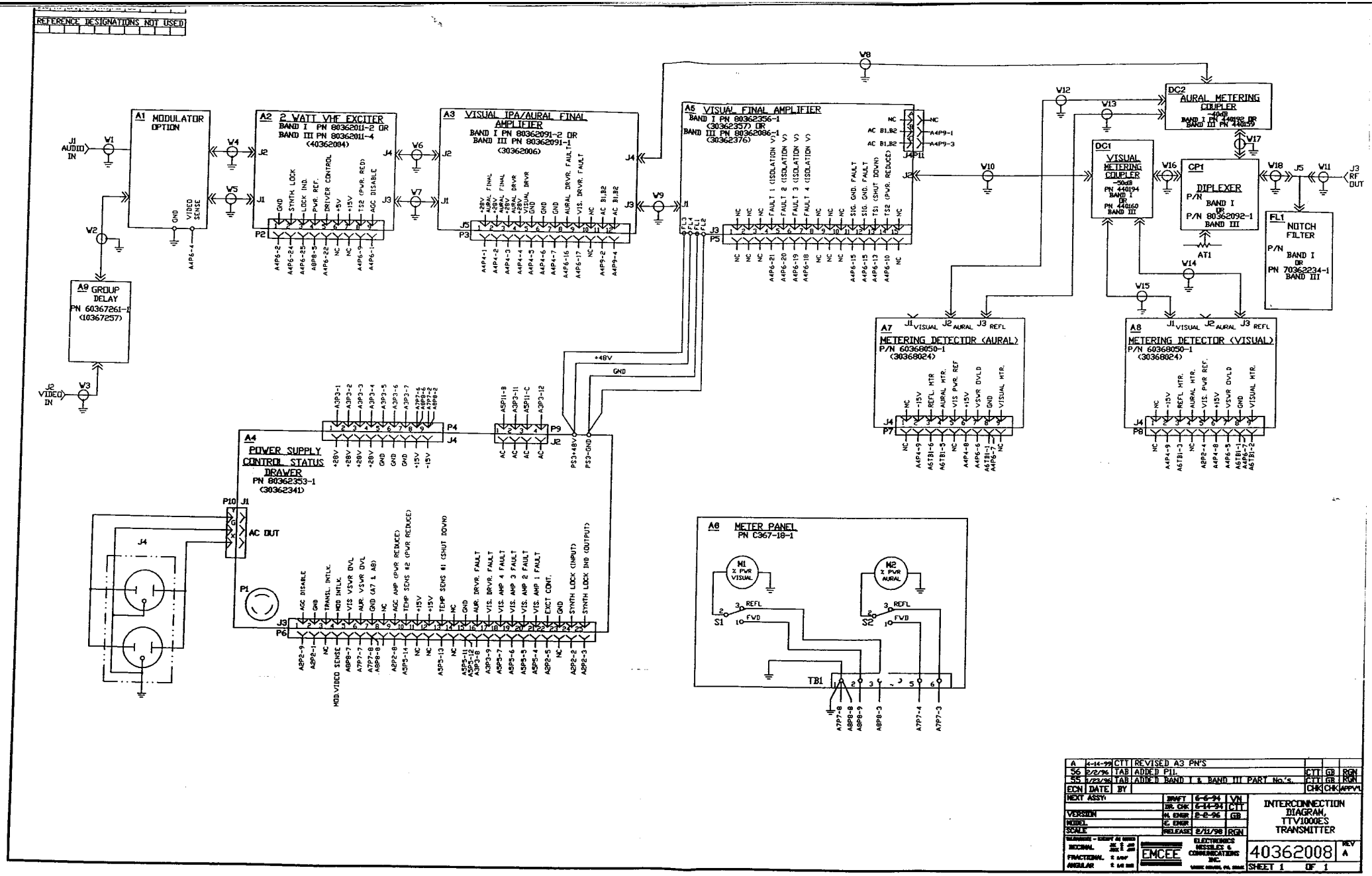


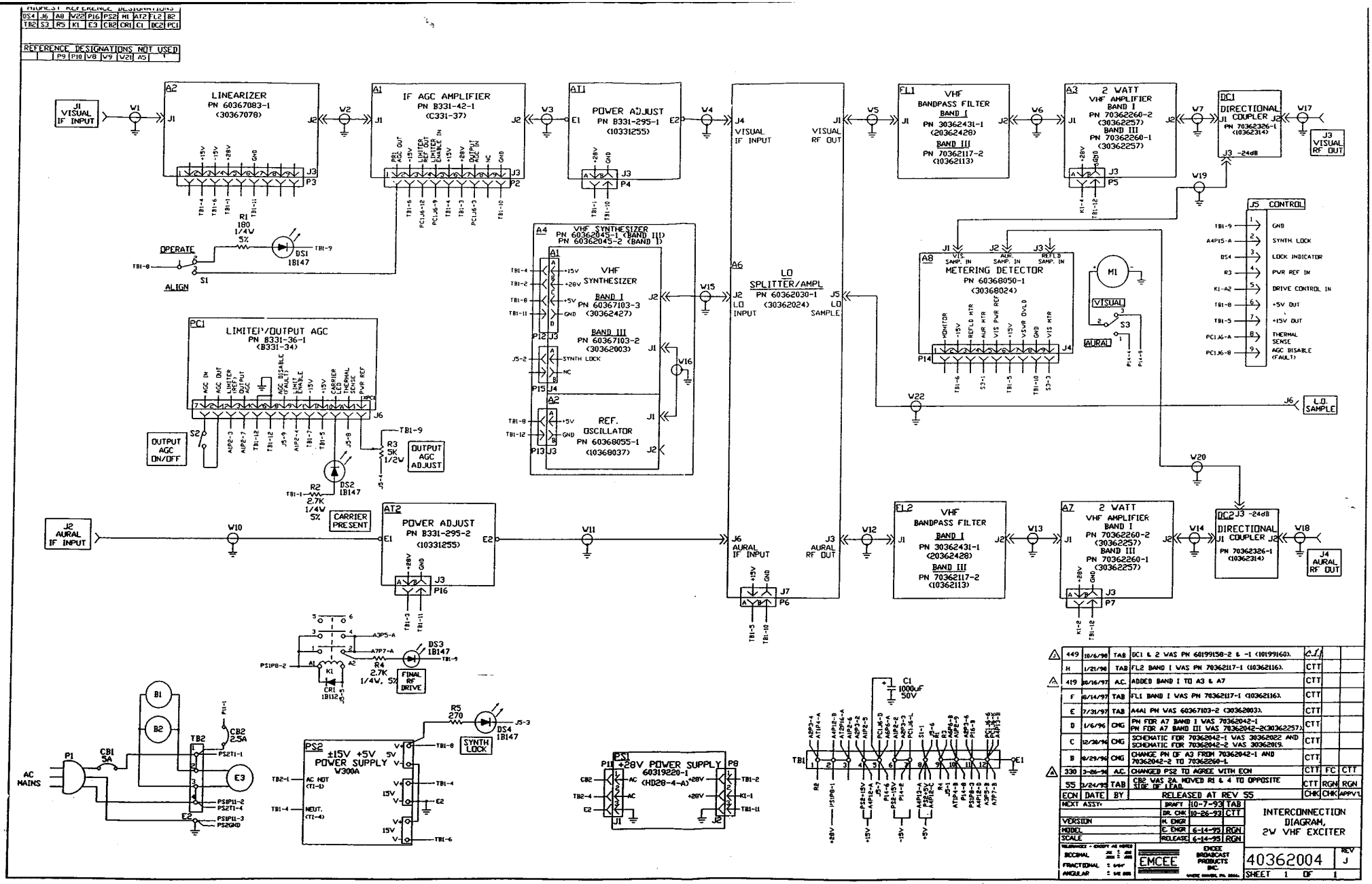
REV: 53 (1) FA, PWR SPLY, CNTRL/STATUS DRWR 1 W/ TTV1000ES

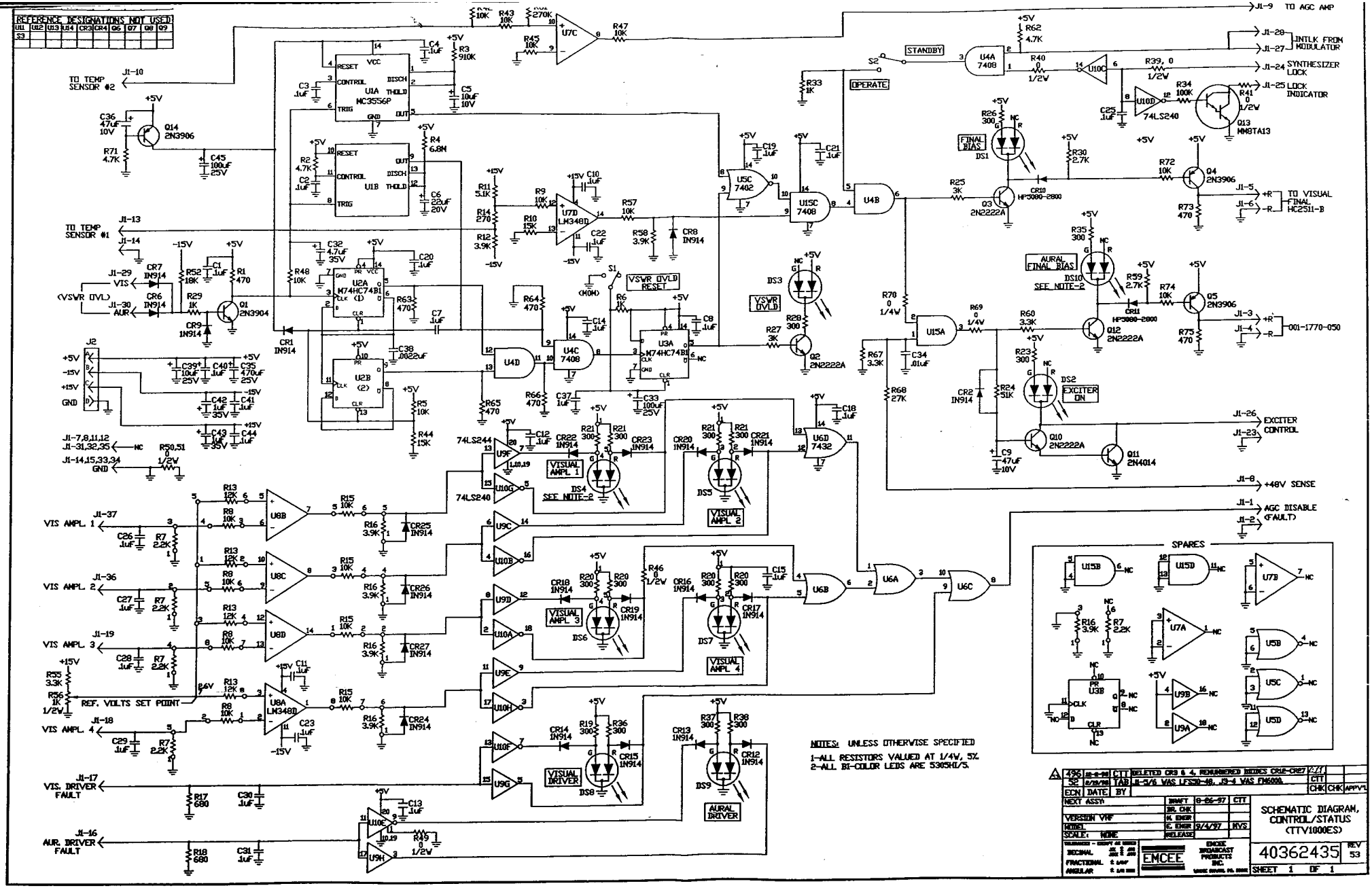
REV: A (2) FA, PWR SPLY, CNTRL/STATUS DRWR 1 W/ TTV1000EG

2/A	11/13/96	TAB	ITEM 15 WAS PN 68362240-1.	CTT	CTT
53	6/20/96	TAB	UPDATED WIRING DETAILS; ROTATED DETAIL B.	CTT	CTT
52	1/29/96	TAB	LABELED WIRING INFORMATION IN DETAILS.	CTT	CTT
ECN	DATE	BY		CHK	CHK APPVL

NEXT ASSY#		DRAFT 6-15-95 TAB	FINAL ASSEMBLY, POWER SUPPLY, CNTRL/STATUS DRAWER
		DR. CHK 6-1-96 CTT	
VERSION		M. ENGR 6-11-96 GB	
MODEL		E. ENGR	
SCALE		RELEASE 12-04-96 CTT	
TOLERANCES - UNLESS OTHERWISE SPECIFIED: DECIMAL .XX ± .02 .XXX ± .010; FRACTIONAL ± 1/64"; ANGULAR ± 0.5 DEG		EMCEE ELECTRONICS MISSILES & COMMUNICATIONS INC.	80362353 REV 2/A; SHEET 1 OF 1


REFERENCE DESIGNATIONS NOT USED
A1 MODULATOR OPTION
A2 2 WATT VHF EXCITER
BAND I PN 80362011-2 OR
BAND III PN 80362011-4
(40362004)
A3 VISUAL IPA/AURAL FINAL AMPLIFIER
BAND I PN 80362091-2 OR
BAND III PN 80362091-1
(30362006)
A5 VISUAL FINAL AMPLIFIER
BAND I PN 80362356-1
(30362377) OR
BAND III PN 80362086-1
(30362376)
A9 GROUP DELAY
PN 60367261-1
(10367257)
A4 POWER SUPPLY CONTROL STATUS DRAWER
PN 80362353-1
(30362341)
A6 METER PANEL
PN C367-18-1
A7 METERING DETECTOR (AURAL)
P/N 60368050-1
(30368024)
A8 METERING DETECTOR (VISUAL)
P/N 60368050-1
(30368024)
DC2 AURAL METERING COUPLER
DC1 VISUAL METERING COUPLER
CP1 DIPLEXER
FL1 NOTCH FILTER
AT1
+48V
GND
AC OUT
TB1
S1
S2
M1
M2
REVISED A3 P/N'S
ADDED P11.
ADDED BAND I & BAND III PART No.'s.
INTERCONNECTION DIAGRAM, TTV1000ES TRANSMITTER
40362008
SHEET 1 OF 1
EMCEE


HIGHEST REFERENCE DESIGNATIONS
DS4 J6 A8 V22 P16 PS2 M1 AT2 FL2 B2
TB2 S3 R5 K1 E3 CB2 CR1 C1 DC2 PC1
REFERENCE DESIGNATIONS NOT USED
P9 P10 V8 V9 V21 A5 1
J1 VISUAL IF INPUT
A2 LINEARIZER PN 60367083-1 (30367078)
A1 IF AGC AMPLIFIER PN B331-42-1 (C331-37)
AT1 POWER ADJUST PN B331-295-1 (10331255)
J4 VISUAL IF INPUT
J1 VISUAL RF OUT
FL1 VHF BANDPASS FILTER
BAND I PN 30362431-1 (20362428)
BAND III PN 70362117-2 (10362113)
A3 2 WATT VHF AMPLIFIER BAND I PN 70362260-2 (30362257) BAND III PN 70362260-1 (30362257)
DC1 DIRECTIONAL COUPLER PN 70362326-1 (10362314)
J3 -24dB
J3 VISUAL RF OUT
J5 CONTROL
GND
SYNTH LOCK
LOCK INDICATOR
PWR REF IN
DRIVE CONTROL IN
+5V OUT
+15V OUT
THERMAL SENSE
AGC DISABLE (FAULT)
OPERATE
ALIGN
S1
R1 180 1/4W 5%
DS1 1B147
A4 VHF SYNTHESIZER PN 60362045-1 (BAND III) PN 60362045-2 (BAND I)
A1 VHF SYNTHESIZER BAND I PN 60367103-3 (30362427)
BAND III PN 60367103-2 (30362003)
A2 REF. OSCILLATOR PN 60368055-1 (10368037)
A6 LO SPLITTER/AMPL PN 60362030-1 (30362024)
LO INPUT
LO SAMPLE
A8 METERING DETECTOR PN 60368050-1 (30368024)
M1
VISUAL
AURAL
S3
J6 L.O. SAMPLE
PC1 LIMITER/OUTPUT AGC PN B331-36-1 (B331-34)
OUTPUT AGC ON/OFF
S2
R3 5K 1/2W
OUTPUT AGC ADJUST
R2 2.7K 1/4W 5%
DS2 1B147
CARRIER PRESENT
J2 AURAL IF INPUT
AT2 POWER ADJUST PN B331-295-2 (10331255)
J6 AURAL IF INPUT
J3 AURAL RF OUT
FL2 VHF BANDPASS FILTER
BAND I PN 30362431-1 (20362428)
BAND III PN 70362117-2 (10362113)
A7 2 WATT VHF AMPLIFIER BAND I PN 70362260-2 (30362257) BAND III PN 70362260-1 (30362257)
DC2 J3 -24dB DIRECTIONAL COUPLER PN 70362326-1 (10362314)
J4 AURAL RF OUT
J7
P6
P7
K1
CR1 1B112
R4 2.7K 1/4W, 5%
DS3 1B147
FINAL RF DRIVE
B1
B2
P1
CB1 5A
CB2 2.5A
TB2
E3
E2
AC MAINS
PS2 ±15V +5V -5V POWER SUPPLY W300A
R5 270
DS4 1B147
SYNTH LOCK
PS1 +28V POWER SUPPLY 60319220-1 (HD28-4-A)
C1 1000uF 50V
TB1
449 10/6/98 TAB DC1 & 2 WAS PN 60199158-2 & -1 (10199160).
H 1/21/98 TAB FL2 BAND I WAS PN 70362117-1 (10362116).
419 10/16/97 A.C. ADDED BAND I TO A3 & A7
F 8/14/97 TAB FL1 BAND I WAS PN 70362117-1 (10362116).
E 7/31/97 TAB A4A1 PN WAS 60367103-2 (30362003).
D 1/6/96 CMG PN FOR A7 BAND I WAS 70362042-1 PN FOR A7 BAND III WAS 70362042-2(30362257).
C 12/28/96 CMG SCHEMATIC FOR 70362042-1 WAS 30362022 AND SCHEMATIC FOR 70362042-2 WAS 30362015.
B 10/23/96 CMG CHANGE PN OF A3 FROM 70362042-1 AND 70362042-2 TO 70362260-1.
330 3-26-96 A.C. CHANGED PS2 TO AGREE WITH ECN
55 3/24/95 TAB CB2 WAS 2A MOVED R1 & 4 TO OPPOSITE SIDE OF LEAD.
ECN DATE BY RELEASED AT REV 55
NEXT ASSY
VERSION
MODEL
SCALE
DRAFT 10-7-93 TAB
DR. CHK 10-26-93 CTT
M. ENGR
E. ENGR 6-14-95 RGN
RELEASE 6-14-95 RGN
DECIMAL
FRACTIONAL
ANGULAR
EMCEE
EXCEE BROADCAST PRODUCTS INC.
INTERCONNECTION DIAGRAM, 2W VHF EXCITER
40362004
REV J
SHEET 1 OF 1


REFERENCE DESIGNATIONS NOT USED
U11 U12 U13 U14 CR3 CR4 Q6 Q7 Q8 Q9
S3
TO TEMP SENSOR #2
TO TEMP SENSOR #1
(VSWR OVLD)
VIS
AUR
CR1 IN914
CR6 IN914
CR7 IN914
CR9 IN914
Q1 2N3904
Q14 2N3906
U1A MC3556P
U1B
U2A M74HC74B1
U2B
U7C
U7D LM348D
U8A LM348D
U8B
U8C
U8D
U4C 7408
U4D
U5C 7402
U15C 7408
U4B
U4A 7408
U15A
U6D 7432
U6C
U6B
U6A
U10C
U10D 74LS240
U9F
U10G
U9C
U10B
U9D
U10A
U9E
U10H
U10F
U9G
U9H
U10E
U15B
U15D
U7B
U7A
U5B
U5C
U5D
U9B
U9A
U3B
U3A M74HC74B1
STANDBY
OPERATE
S1
S2
VSWR OVLD RESET
(NOM)
FINAL BIAS
AURAL FINAL BIAS
SEE NOTE-2
EXCITER ON
VISUAL AMPL 1
VISUAL AMPL 2
VISUAL AMPL 3
VISUAL AMPL 4
VISUAL DRIVER
AURAL DRIVER
DS1
DS2
DS3
DS4
DS5
DS6
DS7
DS8
DS9
DS10
Q2 2N2222A
Q3 2N2222A
Q4 2N3906
Q5 2N3906
Q10 2N2222A
Q11 2N4014
Q12 2N2222A
Q13 MM8TA13
CR10 HP5080-2800
CR11 HP5080-2800
CR2 IN914
CR4 IN914
CR5 IN914
CR8 IN914
CR13 IN914
CR14 IN914
CR15 IN914
CR16 IN914
CR17 IN914
CR18 IN914
CR19 IN914
CR20 IN914
CR21 IN914
CR22 IN914
CR23 IN914
CR24 IN914
CR25 IN914
CR26 IN914
CR27 IN914
J1-9 TO AGC AMP
J1-28 UNTLK FROM MODULATOR
J1-27
J1-24 SYNTHESIZER LOCK
J1-25 LOCK INDICATOR
J1-5 +R
J1-6 -R
TO VISUAL FINAL HC2511-B
J1-3 +R
J1-4 -R
001-1770-050
J1-26 EXCITER CONTROL
J1-23
J1-8 +48V SENSE
J1-1 AGC DISABLE (FAULT)
J1-2
J1-10
J1-13
J1-14
J1-29 VIS
J1-30 AUR
J1-37 VIS AMPL. 1
J1-36 VIS AMPL. 2
J1-19 VIS AMPL. 3
J1-18 VIS AMPL. 4
J1-17 VIS. DRIVER FAULT
J1-16 AUR. DRIVER FAULT
J1-7,8,11,12 J1-31,32,35 NC
J1-14,15,33,34 GND
J2
REF. VOLTS SET POINT
SPARES
NOTES: UNLESS OTHERVISE SPECIFIED
1-ALL RESISTORS VALUED AT 1/4W, 5%
2-ALL BI-COLOR LEDS ARE 5305HD/S.
DELETED CR3 & 4, RENUMBERED REMAINING CR1& CR27
J1-5/6 WAS LF530-48, J3-4 WAS FM6000
SCHEMATIC DIAGRAM, CONTROL/STATUS (TTV1000ES)
EMCEE
ENCOR BROADCAST PRODUCTS INC.
40362435
REV 53
SHEET 1 OF 1